





## 'England replaced as literary leader'

by Frances Gibb

England has been replaced as a centre of linguistic and literary vitality by America, Africa and other English-speaking countries, according to Professor George Steiner, professor of English and comparative literature at Geneva University.

Addressing the English Association as president for 1974/75, he said: "So far as literature may be seen as an index of linguistic energy, one finds that a significant portion of the writing being produced in American English, and also in African, Australian, Anglo-Indian and West Indian idioms, displays an inventive élan, an explosive delight in linguistic resources, a shrewdly absent from the British scene."

England's situation, where "bookshops, which once carried out the essential tasks of education, are turning into glorified tobacconists", compared unfavourably with the Soviet Union, he said.

The Soviet Union "stumbled into the twentieth century with a massive burden of sub-literary and cultural deprivation, but nowhere else are the serious theatre, the symphony orchestra, the public library and lecture hall so vital a presence in daily life."

English prejudice against the American novel, together with the fashion for austere writing, could be seen as an attempt by Britain to resist new influences and preserve its national status, he said.

Literature and literacy in Britain was also isolated from the mass of the population, he said. "The former elite, with its criterion of accent, has helped to create a regime unsurpassed in the arts of

self-recruitment and tolerant dissent." This was not the case in France, where "the average man, outside an urban centre, reads few books, and the television is notoriously banal, but for a number of social and psychological reasons the less educated Frenchman does feel he has a linguistic/literary stake in society."

But he warned that no attempt at isolation, either from the Americanized or populist world, could bring back the past. Ways had to be found to give an evolving mass of society a stake in literacy, and "to bring to all those who have never known them some elements at least of the immeasurable strength of the language and of its history and letters."



Dr George Steiner

Responsibility lay with teachers of English, he said. "English teachers, particularly in comprehensive schools, come as close as anyone can to being the architect of a potential consensus of a shared language field in which social disagreements and resentments erupt neither into violence nor into silence."

Brekin itself had an obligation to be more responsive to English from outside England and to welcome other literature and linguistic idioms.

He suggested a more inspired use of the mass media, in promoting of literary ideas. Education in the widest sense may become Britain's principal industry and export. The need to rethink the function of English in the educational process was a most urgent task.

## Demand strains social work training schemes

by Sue Reid

In the past three years 7,425 students have qualified as social workers, more than half the total number qualifying in the previous 63 years. But only four per cent of residential staff and 40 per cent of field social workers are qualified.

This was revealed last week by the Central Council for Education and Training in Social Work, which replaced councils three years ago, in a review of its progress since it was established.

Sir Derman Christopher, chairman of the council, said it began work at a time of unprecedented expansion in the social services which had made acute the many shortages of qualified people among social services staff.

The social services expanded by 15 per cent in 1971-72, 14 per cent in 1972-73 and 12 per cent in 1973-74, he said. Now only a limited percentage of social workers were qualified and many categories had little or no training facilities.

So, not only has the council been faced with the problem of narrowing the gap between training and the gap actually widening as the ever-increasing demand for social services forces departments to take on more and more unqualified people, he said.

The CCETSW had concentrated on expanding the basic professional training provision for field social workers in the form of courses leading to the Certificate of Qualification in Social Work. Having inherited a diversity of training courses leading to a multiplicity of awards there was now effectively a single training for professional social work, two years long and leading to one award.

Sir Derman also hoped the expansion in the output of qualified

social workers, in spite of cuts in the expansion of social services, would continue. He hoped that would accelerate as the effect of the CCETSW, as the appropriate qualification in residential, day, domestic and education services, began to be felt.

A series of well-publicized cuts in social work clients whom services had failed to protect by intensifying criticism of training and revived demands for more specialization. Courses were now being arranged to meet needs for specialized knowledge of students wishing to work in particular areas of social work.

A new form of training was being introduced in a few areas in the form of a diploma for social workers, leading to a Certificate in Social Work, which was particularly relevant to staff of mental, day and domiciliary services.

Training would be more closely related to the needs of the practice, oriented by a distinction between professional training and training in other areas which help to raise standards for the professional qualification.

The council, financed by Government but working independently, confident its target of 60 per cent expansion in CCETSW training from 4,000 by 1976-77, will be reached.

Twenty-two short courses have been announced by the CCETSW for 1975-76. Treatment methods, work education and training, supervision and research are priorities.

The courses are subsidized by government and organized by local educational bodies at the instigation of CCETSW.

## Three Cambridge dons knighted

by David Walker

In a Birthday Honours list remarkably hard of academic names, Oxford and Cambridge divided the awards. Knights included a CBE for Cambridge men, Professors Brian Pippard, Edmund Leach and Samuel Edwards and to Professor Peter Hirsch from Oxford.

Professor Pippard, who has been Cavendish professor of physics since 1971, is known principally for his work on atomic structure. He has advocated major changes in the shape of first degree courses.

Professor Edwards, chairman of the Science Research Council, is a physicist specializing in materials science.

Professor Hirsch, like his Cambridge colleagues a fellow of the Royal Society, is Isaac Wolfson professor of metallurgy at Oxford and his recent research has been on the structure of metals.

Professor Leach, provost of King's College, Cambridge, is a well known anthropologist and gave the Reich Lectures in 1967. He is a fellow of the British Academy.

Outside the university world, Mr Ashley Bramall, leader of the Inner

London Education Authority, has also received a knighthood. He is a barrister and former Labour MP.

In the Civil list the major awards to academics included a CBE for Mrs Marie Jahoda, who recently retired from the chair of social psychology at Sussex University. Professor F. G. T. Ildred, who stepped into the breach as acting principal and vice-chancellor of Stirling University after the death of Dr Tom Corneil, and Professor Eric Turner of University College London, president of the Union Académique Internationale, are two other university men to receive the CBE.

The list also includes Mr Philip Larkin, the poet, who is librarian of the University of Hull, and Mr F. W. Oakley, chairman of the governing body of the Polytechnic of Central London.

Other awards are: CBE: J. C. M. Browne, professor of obstetrics and gynaecology, University of London; P. S. Byrne, professor of general practice, Manchester University; T. W. Goodwin, Johnston Professor of biochemistry, Liverpool University; Professor R. S. F. Schilling, director of the

Institute for Occupational Health at the London School of Hygiene and Tropical Medicine.

OBE: Professor E. J. Cohn, Kings College London (for services to English law); I. C. M. Maxwell, deputy director of the Inter-University Council for Higher Education Overseas; A. T. Morrison, secretary, Northern Advisory Council for Further Education and Northern Counties Technical Examinations Council; Miss J. D. Shaw, deputy principal, Digby Stuart College of Education, Roehampton; J. P. West-Taylor, registrar, University of York; E. J. E. Jones, professor of community care and general practice, University of Sheffield.

MBE: Miss M. O. Hudson, principal, Atherton and Tyldesley Adult Education Centres; W. H. B. Thorpe, vice-principal, North Nottingham College of Further Education; T. Williams, principal, Londonderry College of Technology.

Among the overseas awards the former vice-chancellor of the University of Papua New Guinea has been made knight bachelor in the Australia list. He is Mr John Gunther of Queensland, Australia.

## Student cuts likely next year OU dean warns

by Frances Gibb

The Open University is likely to cut its student intake by 4,000 to 4,500 next year because of financial constraints, Professor John Ferguson, dean and director of studies in arts, said last week.

Professor Ferguson was speaking at the launching of his book, *The Open University from Within*, the third in a series on higher education edited by Professor Roy Niblett.

He said: "When the Department of Education and Science funded us last year for 20,000 students for 1975 and 1976, we calculated the total number of students this money would give us this year. To take in 20,000 students again in January, we cannot afford it."

This was because students were passing more slowly through the system. Courses were less easy to afford so students took one and a half courses instead of two.

"This is not official policy, but for financial reasons we shall try to take between 16,000 and 17,000 next year," he said.

There have been 52,551 applications this year, which exceeded last year's total by 14.

A spokesman for the university said the level of intake would be decided after a meeting of the planning board on June 19. The OU was faced with a deficit of between £1m and £1.5m for this year, because of inflation and because students were taking longer to go through the system.

There were about 49,000 students taking courses in 1975, but the university had expected about 46,000.

Other possible areas for economies are course production levels or general services and administration (about 12 courses are produced a year with the aim of reaching a target of 87 by 1984).

On the OU's teaching methods, Professor Ferguson said that long distance teaching could well be applied elsewhere. "I believe in the lecture, but only two or three lecturers out of 20 in my day at Cambridge were effective. People didn't take the trouble to communicate."

Except where a school or college had an outstanding "communicator", the OU's methods could well be applied, he said. Many students in large faculties did not have any face-to-face teaching anyway.

He hoped the university would develop more inter-faculty courses. The OU system had broken down departmental boundaries, but it was still rather bound by faculties. One major development since he had written his book had been the pilot project for 18-year-olds.

"It is now clear that the pressure for places is off the other universities and I think this project will not in fact be a major consideration. We won't take under-21s unless they are in prison or hospital."

But the OU still had a function to fulfil for 18-year-olds who do not find that the traditional system offered what they wanted.

The Open University is undertaking a £37,000 retraining scheme involving more than 2,000 part-time teaching staff in preparation for the changes to the new tuition and counselling system next year.

Students will then be assigned to one person for their foundation course instead of the present system where students are linked to a tutor and a counsellor.

During the first phase of the retraining programme, new under-way, the university is consulting part-time teaching staff to obtain comments on the operation of the new system where the tutor and counsellor roles are amalgamated. Extracts from Professor Ferguson's book, p. 15.

## News in brief

### OU/college link wins approval

The experimental link between the Open University and Milton Keynes College of Education has been approved by the DES and students at the college can now work for the university's BEd degree with a teaching qualification.

The Department has approved a permanent scheme whereby all six credits for the degree can be taken in three years. A fourth year is available for able students to gain another two credits which will qualify them for an honours degree.

The college moves to new purpose-built buildings next month on the higher education campus of Milton Keynes.

### 180,000 visit museum

Nearly 180,000 people visited Oxford University's Ashmolean Museum during 1973/74. The figures were marginally lower than the previous year.

During the year Friends of the Ashmolean made a number of grants to the museum including £3,000 to the Department of Antiquities and £2,000 towards the purchase of Crusader coins. A further £1,000 was given towards the purchase of the model by Justus Sutermeister.

A Greek marble head was presented to the museum by Dr John Evans. It had been excavated by Sir Arthur Evans in 1877.

### CNAAP post for Bethel

Mr David Buhell, director of Leicester Polytechnic, has been appointed chairman of the Council for National Academic Awards. The committee is successor to the former National Council for Diplomas in Art and Design.

### Statistics fellowships

The Social Science Research Council is to set up two professorial fellowships in statistics and their use in social science at Glasgow and Lancaster Universities. The £25,000 endowment will be for ten years.

### Change of address

The post graduate awards division of the Social Science Research Council has moved. Its new address will be 1 Temple Avenue, London EC4A 3BH. Telephone 01 351 5252, extension 1403.

## APT challenges Government on parity of salaries

by David Hencke

The Association of Polytechnic Teachers has challenged the Secretary of State for Education to say how polytechnic and university pay can be achieved by October, 1976, when polytechnic salaries are being linked with those in further education colleges and not universities.

Following the recent arbitration award to university teachers the APT has pointed out that the divergence of polytechnic and university salaries post-Houghton has already begun. It claims this is directly due to the present linking of polytechnics with further education colleges instead of universities.

The APT say the universities' committee has commented unfavourably on the probationary system and on the conditions of service in further education colleges. It adds that the committee is not in favour of comparability being established between polytechnics and further education colleges where there is a large amount of non-degree teaching.

In a further claim to the Secretary

of State the APT say the polytechnic sector scale is being compressed by the further education negotiators. The APT has lodged an objection with the Registry of Friendly Societies against the proposed scale of the new college and polytechnic lecturers union, the Association of Teachers in Colleges and Polytechnics.

The union has been proposed by the Association of Teachers in Colleges and Departments of Education and the Association of Teachers in Technical Institutions and would be the major union in the public sector.

The APT says that both the initials ATCAP and the name could be confused with the Association of Polytechnic Teachers since three of the four initials are used by the APT.

Dr Dennis Elwell, executive secretary of the APT, said: "We believe the union will have a wide choice of initials and could find a new title which would not be confused with our own. We hope a solution can be found quickly."

## Birmingham degree offers French law

Birmingham University is to introduce next year a new four-year course leading to the honours degree of Bachelor of Law (Law with French). The degree is expected to open the way to expanding opportunities for legal, commercial and administrative appointments within the European Community. The whole of the third year will be spent at the University of Limoges.

The purpose is to enable those with a level French to extend their proficiency of the language, obtain an introduction to French law, and at the same time qualify for the maximum exemptions in professional examinations of the Bar and the Law Society.

It is a cooperative effort between the faculty of law and the Department of French, which has extensive experience of combining languages and other disciplines. The law faculty has for many years placed special emphasis in its teaching and research upon French law, comparative law, and European law.

Another new course, law and politics, will also be introduced in the 1976-77 session. It will consist of approximately equal parts of legal and political studies, and provided that applicants are chosen in the first year, all one examination from Part One of the Bar and Law Society.

## Study of libraries for disadvantaged

The Library Advisory Council for England has set up a working party to study library provision for the illiterate and semi-literate, the immigrant community, those disadvantaged by environmental and social deprivation, isolation, mobility, the handicapped and elderly, and prisons and hospitals.

The committee, chaired by Mrs. Anne Corbett, a freelance journalist, is to make recommendations to the Government.

Details of special library services should be sent to the Secretary, the Library Advisory Council for England, Department of Education and Science, 38 Belgrave Square, London SW1X 8NR.

## Bank gives prizes

Williams & Glyn's Bank Limited are to give £1,500, in £50 prizes, over the next three years to Open University students who graduate with first class honours degrees but who were not entitled to exemptions from any part of the course. A maximum of £500 will be awarded in any one year.

## Computer delay for Imperial

The Computer Board has told the University of London that it cannot allocate sufficient funds for Imperial College to purchase an ICL 2980 computer, one of the recently announced New Range Systems.

The board, which advises the Department of Education and Science on the purchase of major scientific and technological equipment for universities and polytechnics, is reconsidering whether the university should be allocated funds that would permit the college to instal the smaller ICL 2970 from the same range.

But it has told the university that cannot encourage the acquisition of a new range computer until there is evidence that such a machine can meet the university's needs.

In a letter the board says it has already ordered four New Range systems for other universities, and until some experience has been gained in their operation, it is unable to assess whether they will match up to the particular requirements of other universities.

## Spectrometer study given £126,000

Three research workers at Oxford University have been awarded £125,976 for three and a half years by the Science Research Council to develop a new type of spectrometer which, it is claimed, will enable a range of experimental possibilities in chemistry and biochemistry.

Dr R. E. Richards, Dr D. I. Houlst and Dr I. D. Campbell, all members of the university's biochemistry department, have received the grant for the development and construction of a Fourier transform spectrometer to operate at a frequency far higher than any instrument so far constructed.

According to the SRC, such an advanced technology involved the construction of this type of which is present in the world in the production of superconducting magnets of high homogeneity.

## Abortion move stirs students

Students are expected to play a major role in the growing campaign against the Abortion Amendment Bill which would severely restrict legal abortion in Britain.

Ms Susan Shipman, national secretary of the National Union of Students said last week there had been enormous support from universities and colleges asking to extend tomorrow's demonstration in London. The union had received enquiries from a number of colleges of education and universities who did not normally join in demonstrations.

At a conference run jointly by the NUS and A Woman's Right Choose, the group organizing a strike to the bill, a number of women spoke of the loss of educational opportunities they have suffered if they had not been able to have an abortion.

One student at Queen Mary College, London University said she only a miscarriage allowed her to accept a university place. At the time abortions were not available under the present legislation. Ms Shipman feared the repeal of this legislation would be to the return of the backward abortionists.

She also warned that some women in particular students, could be "do-it-yourself" abortionists who would endanger health and lead to provocations under the law.

She said that in an ideal world contraception might be preferable to abortion since it was not just a matter of many colleges and universities, but was not an alternative.

Students who were concerned about abortion should be made more available. About 90 per cent of delegates to the NUS April conference in London signed a petition against the proposed bill.

## Part-time humanities course at Bolton

A part-time degree course in humanities has been approved by the University of Bolton. The course will be delivered from the following autumn by the Institute for the Study of the Humanities and will be given to the needs of adults. History, literature and philosophy will be the subjects studied.

## Sussex faces 'less money for more students' dilemma

The money Sussex University will have to spend in 1975-76 will be over 4 per cent less than last year in real terms, despite a 6 per cent rise in student numbers.

Professor Asa Briggs, vice-chancellor, warned recently against "fratricidal strife" in discussions on how the money should be allocated.

In its plans for next academic year Sussex has a 10 per cent saving in fuel and telephone bills. All non salary costs will get "supplementation" of 45 per cent.

As part of economy measures at the university of Kent, which faces a deficit next year of £150,000, an internal staff magazine *Fuss* may be closed. A senior lecturer said many staff were increased by "thoughtless economies when spending on other parts of the university could be cut."

In its last issue, a *Fuss* editorial said: "How much does it cost the university in expense and extra payments accounts and why are such items not made public? What are the salaries of professors and vice-chancellors and why are these kept secret?"

## German decline fear

University lecturers have become concerned about a fall in interest in German, according to Mr Alan Selth, Liberal MP for Berwick-on-Tweed.

In a letter to Mr Ernest Armstrong, former Parliamentary Under-Secretary of State for the Department of Education and Science, Mr Selth says that educational reorganisation instead of benefiting the language seems to be leading to its demise.

Mr Armstrong, in a reply, says that inspectors are looking carefully at developments and they are attempting to stimulate local initiatives through advice to schools and authorities and, through in-service training.

## Clinical staff claim better NHS pay threatens research

by David Dickson  
Science Correspondent

Clinical lecturers at nine London medical schools claim that important research projects are being threatened by pay disparities between staff in the university sector and the National Health Service.

They say that present overtime payments for NHS but not university employed doctors are leading to a decline in academic medicine which will in the short term hinder medical advance and in the long term threaten the viability of the Health Service itself.

The lecturers are demanding a statement from the Department of Education and Science on its present interpretation of the accepted notion of parity between university and NHS salaries.

The lecturers are demanding back payments from the DES to make up for present disparities from July 1, 1974, the date on which NHS staff became eligible for overtime payments for any work in excess of 80 hours a week.

Dr David Morris, a lecturer in endocrinology at the London Hospital Medical School, said that about 40 per cent of the work carried out by university employed staff in the medical units of teaching hospitals was service work on behalf of the NHS.

Some lecturers spent most of their time on this work, but found themselves working alongside NHS junior doctors on the wards receiving considerably higher salaries.

"This problem is now four years old, and no acceptable solution has been offered by the DES, or the Department of Health and Social Security on whose behalf the work is done," Dr Morris said.

"Its continuation has caused a complete breakdown in the morale of junior academic clinicians, and has caused a decline in the numbers of recruits in their ranks. This threatens the viability of medical academic departments in hospitals, whose work forms the foundation of the growth and advance of medical science in this country."

According to a statement issued this week by the Clinical Lecturers Group, an ad hoc group of lecturers at London medical schools, the present situation contravenes the spirit of the ruling by the Prices and Incomes Board in 1968 that there should be broad parity of remuneration between academic and NHS salary scales.

The injustice of this situation has been recognized by the University Grants Committee—with whom the profession negotiates on behalf of academic medical staff—and the universities for some time," the statement says.

"However, the DES—which provides funds through the UGC—has adamantly refused to rectify this anomaly. In particular, it has rejected any form of retrospective payment for the years of inequality."

The group claims that projects under threat include work on the prevention of heart disease at Hammersmith and London Hospitals.

## Discrimination hits coloured graduates survey shows

Coloured students seeking jobs are discriminated against, even if they have a university degree and a British education from birth, two researchers at Bristol University have claimed.

Mr Roger Ballard and Ms Bronwen Holden, members of the university's Social Science Research Unit on Ethnic Relations, compared the job-seeking experiences of two groups of students on leaving university. The groups, one white and the other of Asian or West Indian descent, were virtually identical apart from their skin colour.

The project revealed that white students were four times more likely to be offered a job than their coloured counterparts. Of the applications made by white students 28 per cent brought a job offer while the coloured students' applications had a success rate of less than 7 per cent.

Half the coloured students received no job offers at all and only three out of 22 had any choice but to accept the one post they had been offered. However, many of the white students had a choice of choosing from several jobs.

The researchers stressed that the coloured students had excellent qualifications as well as a great familiarity with British society after years of residence in this country. More than two-thirds had arrived in Britain before they were 16, more than a quarter before 12 and a few had been born here.

The survey was cross-checked to discover if different results for the coloured group could have been due to a class of degree social class of parents or even the age of first entering Britain. None of these factors, say the researchers, made any significant difference.

Mr Ballard and Ms Holden claim university careers officers and employers think coloured students about to graduate should pretend to be white, not make an issue about their identity or highlight their awareness of racial discrimination. But the researchers say the coloured students did not better themselves by trying to do so.

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## European teacher trainers form association

A European association for teacher education is to be established following a meeting of college of education principals and lecturers in Strasbourg.

Representatives of five European countries, including the directors of colleges in Strasbourg, Utrecht, Gothenburg, Freiburg, Cologne and Didburg, agreed to establish the association to strengthen links in Europe.

The association is also considering providing an opportunity in Strasbourg for student exchanges so that British students can discuss similar problems and with Council of Europe officials.

The Council of Europe is hoping to give positive backing to the venture and M Gabriel Frangoulis, of the European Cultural Foundation, has offered to help with administrative costs.

Other colleges interested in the association include Falun and Linköping (Sweden), Stockholm (Norway) and Berlin, Tübingen, Cologne and Bonn in Germany.

## University of Exeter LANGUAGE CENTRE

A German/English Linguistic Institute will be held in Exeter University from 30th July-10th August.

Cost: £80 (residential) including tuition, fees and meals or £120 (non-residential) including tuition.

Further details from: Dr R. A. C. Hurlbert, Director, Language Centre, University of Exeter, Exeter EX4 4JQ.



## Give FE better air time, Annan told

by Sue Reid  
The BBC should allocate more money to further education broadcasting and improve the air time of this service, according to a memorandum from the Further Education Advisory Council to the Annan Committee on the future of broadcasting released this week.

The Council for Educational Technology for the United Kingdom in a similar memorandum to the committee have also asked for air time to be improved with a proportion of peak hours freed for educational broadcasting.

Even a modest increase in the resources allocated to further education would enable new tasks, some urgent and all desirable, to be undertaken in the immediate future, say the Further Education Advisory Council. But it insists that to cover the further education field adequately a much larger expenditure is needed.

The scope of further education broadcasting was almost unlimited said the council in evidence to the committee under Lord Annan, Provost of University College, London. But it was constrained by financial resources and limited air time with the BBC spending only 1.6 per cent of its annual licence income, £2,200,000 in 1973/74, on further education output.

Equally restraining were the limitations on volume and timing of the air space made available in competition with all other broad-

casting demands and requirements. Most television provision was made at weekends or late at night with only BBC 2 providing an early evening service.

The council conceded that in addition a few day time placings on both channels were allocated for programmes for colleges of further education but added: "It has been said that the audience for further education television programmes must for the most part be highly dedicated or innumerate to devote their weekend mornings and the late evening hours to study."

The position of radio was scarcely more satisfactory. It was essential to provide programmes at times when people might be watching or listening and, in the case of radio, programme availability should be extended to more geographical areas.

If broadcasting in the future was to make an extensive contribution to adult education there was now a case for examining alternative sources of revenue from public funds, said the council. In particular, there should be an improvement in the equipment of colleges of further education and adult education centres to enable them to receive and record broadcasts easily.

More effort was needed to make teachers and group leaders in further education aware of the potentialities of education broadcasts and there should be a diversion of funds

available for research into the evaluation of these broadcasts.

Publications accompanying present further education broadcasts were praised in the council's memorandum. They were produced well and the service would be poorer without them.

Also welcomed were the substantial contributions now being made to further education by the BBC's local radio stations. The council hoped any future development of local television would include a similar educational contribution.

Proposals made to the Annan committee by the CET included a call for education broadcasting and education to move closer and a recommendation for an organizational framework for broadcasting.

The CET wanted to see that teachers and others involved in adult and informal education had an effective impact on the aims and content of programmes.

It argued for the creation of a national educational communications body to coordinate programme making and distribution, funded by its own resources. The CET did not favour an exclusive channel for education but wanted to see some education programmes on every channel, including a proportion in peak hours.

## '100 NELP' posts to go via concealed measures

by David Hencke

The North East London Polytechnic is introducing concealed staffing cuts by reducing staff and increasing students, the Barking branch of the Association of Teachers in Technical Institutions says in a memorandum issued to *The Times* this week.

Dr George Brosnan, the director, dismissed these claims as "a partial view" and "a typical inter-national Socialist ploy". He says he has never seen the document even though it has been put before members of the academic board.

According to the Barking branch, which is one of four ATTI branches represented in the polytechnic, a total of 100 staff posts will have disappeared by September.

It says that a total of 63 will be "lost" by increasing student enrolments without appointing new staff, a further 30 by resignations leaving posts unfilled and another 15 by extra students who are expected to enrol in September.

The ATTI also accuses the polytechnic of running "an undignified spectacle of the directorate giving advice to itself via a system of bogus consultation".

They say that the academic board and its sub-committees have to wade through masses of paper which make it difficult for decisions to be taken or for the directorate to be challenged. One academic board has 310 pages of documents amounting to 100,000 words.

"Their contents cover the activities of a bewildering assortment of boards, committees, sub-committees, working parties, agencies and it is a laborious business to trace any simple item from its start to a conclusion."

Ms Judith Hamilton, secretary of the Barking branch, said the situation was expected to get worse and could lead to a challenge of the directorate in September.

Staff are not likely to be kindly to increased student numbers when enrolments are increased in September," she said.

The document adds: "It falls that our teaching situation working conditions in September will be very substantially worse than now unless the polytechnic ATTI carries out its expressed intention of meeting cuts in staff with commensurate cuts in student numbers."

A conference on devolution in education was held at Edinburgh University last weekend, sponsored by The Times Educational Supplement, Scotland. Speakers from the universities, further education and the schools asked what kind of responsibilities for education the Scottish Assembly will have and what kind of changes will follow. David Walker reports.

## Minister warns of transfer chaos

The complex administrative problems of devolution of education have not yet been broached, Lord Crowther-Hunt, Minister responsible for Higher Education, said in the opening address to the conference.

He outlined the kind of choices the Government would have to make in Scotland and Wales to ensure there was a real transfer of power without administrative chaos.

Would the planned Welsh assembly have responsibility for primary, secondary and further and higher education, he asked.

"If not we would have created a situation in which Welsh local authorities would deal with the Welsh government and assembly for primary and secondary education, but with a different government, possibly of a different political complexion, for further and higher education."

"On the other hand if the Secretary of State for Education's executive responsibilities for further and higher education in Wales were handed over to a Welsh assembly it would make it more difficult to plan further and higher education provision on an England and Wales basis."

For example, if the number of teacher training places were being reduced in England would it make sense to give the Welsh carte blanche on the number of teachers produced in Wales?

For all his emphasis on the prac-

tical difficulties of devolution, Lord Crowther-Hunt established his own commitment to the transfer of political power away from Westminster.

He argued that Britain was undergoverned by elected representatives and that Whitehall and Westminster were vastly overburdened with work. Devolving power could restore faith in government by moving decision-making closer to the people.

Studiously avoiding any bias in his discussions of the options available in Scotland Lord Crowther-Hunt was forced to point out that leaving the universities outside the ambit of the Scottish government would make much educational planning ineffective.

"If the universities are excluded will it be possible for Scotland to have effective planning of all post school education, determining the balance of student expansion, for example, between the universities and the Central Institutions?"

He then spoke on reserving powers of veto for the United Kingdom government for legislation passed by a Scottish assembly. It would be wrong to give away power with one hand then wrest it back with the other, he said.

In conclusion Lord Crowther-Hunt said that whatever the administrative solutions found to these problems, they would have fundamental implications for the English regions. Would legislation drafted specially with Scotland and Wales in mind be suitable for education in England?

## 'Assembly will stop Bennery'

The Scottish Assembly would stop Bennery in education, said Lord Crowther-Hunt, as he addressed the summit of the Scottish educational system, a senior academic told the conference.

Dr John MacIntyre, professor of divinity at Edinburgh University, said the Scottish universities had first put their own house in order, take their eyes away from the "distracting" University Grants Committee in London, and look at problems nearer home.

The UGC was no longer a buffer against the depredations of a government that set out to do in education what Mr Tony Benn had been doing in industry, Lord Crowther-Hunt's threats of planning were very disturbing.

Professor MacIntyre's speech brought out two major themes: would devolution of power mean the end of the massive overpopulation of universities and their relations with other parts of the educational system? What in detail were the changes that would follow Scottish control of higher education?

Professor MacIntyre juxtaposed manipulation from London with enlightened government from Edinburgh. He argued that university teachers ought to have "no benefit of clergy". As part of the wider system of colleges and schools they should be of service to Scotland, in the broadest sense.

Lord Crowther-Hunt challenged Professor MacIntyre over the question of planning: would he accept manpower planning from a democratic Edinburgh government? Professor MacIntyre emphasized that the universities had themselves to produce a scheme for Scottish education before they were commanded from outside.

Other speakers echoed his desire for enlightened government from Edinburgh when the assembly was set up, though they differed about political colouring. Dr Tom Bone, principal of Jorisdale College of Education in Glasgow, was pessimistic that the assembly would do the right kind of men to carry out the changes he thought necessary.

The assembly, he argued, presented an opportunity to escape from the tradition of civil service secrecy that had been exposed in the recent OECD report on the De-

ment and Civil Service departments and though they do at present show some independence of judgment in general terms a future move to Edinburgh and the establishment of a separate Ministry of Education will markedly increase the time that can be given by politicians themselves to the formulation of policy.

Dr Bone saw the Scottish government taking decisions within a wider setting than the restrictive departments of Westminster.

Two speakers argued that talk of devolution before discussing the kind of changes necessary was wrong. Mr Ronald Macdonald, director of education for the Highland region, said that if it was a question of the maximum permitted of educating a university student, then once the need was established together with a cost, the resources should be willed at the appropriate level of government.

Mr Macdonald introduced another theme into the conference—the role of strong regional government under an assembly.

Miss Diane Dawson, a lecturer in economics at Glasgow University, examined the financial mechanism needed to underpin a working government in Edinburgh.

If the costs of education in Scotland and England were different, would the UK block grant to a Scottish government—which was the most likely mechanism of financial differences to remain? For example, if spending in Scotland were 30 per cent higher than in the rest of the UK, should finance out of general taxation support this advantage for the Scots?

Nevertheless Miss Dawson declared herself in favour of a form of Scottish devolution that spent more time discussing the detailed problems of educational spending. It would also ask, she hoped, more complicated questions than at present.

In the last analysis, however, would a Scottish government be able to change things? At present most of education and social services spending was at the level of local government. A Scottish government simply handing out a large block grant to local government would be

Sue Reid reports on two surveys of graduates' first employment

## Job hunting blurs binary line

The patterns of movement by graduates of British universities and polytechnics are becoming steadily more alike, a dual survey of students' first destinations, published recently by the Central Services Unit for Careers and Appointments Services, has shown.

The unit, giving detailed information about polytechnics for the first time, says changes of route into employment suggest that graduates from both sectors are making increasingly similar career choices.

Movement figures were published in two related booklets. Information for the polytechnic booklet was prepared by a working party of polytechnic careers advisors with the cooperation of the Committee of Directors of Polytechnics and the help of the Department of Education and Science.

Universities' details were drawn up by the statistics sub-committee of the Standing Conference of University Appointments Services. The figures were processed by the Universities' Statistical Record.

The overall survey pinpoints a steady fall in the number of students going on to research and further study from university while showing an increase in the case of polytechnic first degree and Higher National Diploma graduates.

Thirteen per cent of university graduates chose research or further study in 1974, while the number from polytechnics totalled nearly 12 per cent in the case of HND students and 7 per cent in the case of first degree graduates.

The unit believes the significant increase in polytechnic leavers going on to further study and research is largely due to students on HND courses wanting graduate status and first degree courses.

There was a drop in the number of university graduates going on to further vocational training in 1974, as there was in the polytechnics. But while there was a fall in the proportion of university leavers entering teacher training—15 per cent of the 1974 total compared to 17 per cent in 1973—the polytechnic figures were up.

A 1972/73 pilot survey pointed to a rather smaller percentage of graduates entering teacher training from polytechnics than from universities but in 1973/74 the figure rose to 10.4 per cent of the known first degree students, a significant increase in the number over the previous year. Rather fewer HND students went into vocational training, preferring employment, and only 12 of the 2,319 included in the survey entered teacher training.

The number and proportion of

university graduates going straight into employment in the United Kingdom increased as last year's trend for three years. In the polytechnics the numbers stayed much the same, giving a final proportion figure of 44.3 per cent of university graduates entering employment and 54.5 per cent of polytechnic leavers.

Accountancy attracted a high level of entrants from both the polytechnics and universities. There was a significant increase in the number of polytechnic leavers entering chartered accountancy, especially among those with degrees.

A similar swing was seen among university leavers. The number entering the profession from university in 1974 was 1,518, 7.4 per cent of the total entering employment, compared to 1,326 or 7 per cent in the previous year. There were also increases in the proportion of university students going on to take the Law Society's examinations and Bar examinations.

The proportion of polytechnic and university leavers entering the public services has risen. Public service claimed 24 per cent of the total number of university graduates entering employment, 23.5 per cent of polytechnic leavers entering employment went into local government and the hospital service.

Women were very much in the minority at polytechnics and there were important differences in the fields entered by men and women after graduation. In the polytechnics survey 24.1 per cent of graduates were women compared to 33.1 per cent in the universities. Only 45.3 per cent of the known polytechnic women graduates entered employment compared to 57 per cent of the men.

However a far higher proportion of women entered teacher training—21.6 per cent compared to just 6.9 per cent of the men.

The proportion of university graduates entering industry remained almost static in 1974 in spite of the high demand from industry. About 41 per cent of those entering employment chose industry compared to 42 per cent the previous year.

At the polytechnics there was a drop in the percentage of leavers choosing industry and commerce. Engineering and allied industries, down from 24.9 per cent to 20.6 per cent, and building and civil engineering, down from 10.7 per cent to 7.3 per cent, suffered most. Entry into other commerce, which includes retailing and distribution, also dropped nearly 2 per cent.

Similar changes in employment occurred among HND students with entry into industry and commerce falling from 85.6 per cent in 1973 to 77.8 per cent in 1974. But of the HND students leaving polytechnics rather more women entered employment than men, 68 per cent compared to 58 per cent. Among those women with HNDs entering employment 59.8 per cent chose industry and commerce and 24.3 per cent public service while the figures for male HND students were 83.5 per cent and 11 per cent.

TABLE 1  
First destinations of polytechnic first-degree graduates (Covered in survey for 1973-74 (with comparison for 1972-73))

	Total covered by survey	Research or academic study	Further study	Teacher training	Local government	Public service	Industry and commerce	Other	Unknown
1973-74	4,714	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110
% of total in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
% of total known in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
1972-73	4,714	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110
% of total in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
% of total known in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6

TABLE 2  
First destinations of graduates of universities in Great Britain 1973-74

	Total covered by survey	Research or academic study	Further study	Teacher training	Local government	Public service	Industry and commerce	Other	Unknown
1973-74	4,714	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110
% of total in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
% of total known in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
1972-73	4,714	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110
% of total in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
% of total known in survey	100	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6



## Friday People

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THE TIMES LITERARY SUPPLEMENT

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## Electronic music gets £9,000 boost

A research fellowship for the study of electronic music is to be established at Keele University with the help of a £9,000 grant from the Leverhulme Trust Foundation.

The research fellow is to be appointed for a period of two years, and his programme will involve the presentation of various kinds of electronic music to audiences at Keele and elsewhere, alongside the development of his own work as a composer or performer.

Professor Peter Dickinson, the university's first professor of music, said last week that electronic music had been misunderstood by many people both inside and outside the musical profession.

It was hoped that the new project would lead directly to wider understanding of the need for this new medium.

## 16-19 year olds like study by post

Most students of the National Extension College, the non-profit making correspondence college in Cambridge, are between 16 and 19, a survey by the college has revealed.

Of its 10,000 students 7,000 are in the 16 and 19 age group and about half are still in full-time education.

They study by correspondence, resist failed examinations or do not follow subjects not on the school curriculum. Reasons for taking courses given by a pilot group of students who had finished their time education were top class and lack of a suitable class and preference for working at home.

None of the students, who are between £8 and £20 a course, receives any financial support, time off from employers.



## English teachers

From Messrs D. W. Hopkins and N. T. Roberts  
Sir,—As two teachers, quite happy to accept Mr H. S. Davies's label of "English literature teachers" (THES, June 6), we are both alarmed and astonished at some of the qualities with which it appears, he thinks this label invests us. We presume from his letter that he thinks that a command of "the more formal and objective register of the language" is likely to be outside the range of students trained by "English literature teachers", who are only capable of encouraging in their students a command of "literary and self-expressive English". Is Mr Davies (himself, we note, a university teacher of English) implying that clarity and precision of thought, in whatever "register", are qualities ignored by the great creative writers of our language? To our mind, these are central contributory factors to their greatness. And is Mr Davies denying that one effect of studying such writers might be to instil a similar clarity and precision in the student, besides doing what a "linguistic" approach to language so rarely does—that is, to suggest to the student that there is some connexion between language and his concerns as a human being?

Our own experience with our sixth form "literary specialists" reveals a very high level of success in the use of English examination. We have, incidentally, had similar success with students of science, whose preparation for the Use of English examination has been conducted, almost exclusively, via a course of "literary" study.

Many of the assumptions in Mr Davies's statements are, we fear, perceptions of theories serving to live off language (which it is assumed can be mastered by a series of technical exercises) from literature, which, in our view, constitutes the means whereby language is organized into significance, and which provides the only means whereby the student can get some idea of the full range, precision, and possibilities offered by our language.

Yours sincerely,  
D. W. HOPKINS and  
N. T. ROBERTS,  
English Department,  
Wyggeston Boys' School,  
Leicester.

## Vico

From Mr Andrew Belsey  
Sir,—Dr Gorman's remarks on my review of Leon Pompa's *Vico*, (THES, May 23) though shorter than my review, were long enough to contain a misunderstanding of my position.

Dr Gorman appears to believe that because I mentioned Dr Pompa's approach to Vico I am therefore advocating what he calls "external" history of ideas, which I understand to be the relating of ideas to their social and economic conditions. While there might be a place in historiography for this approach it was not what I was putting forward in this instance; what I was commenting on was the lack of an intellectual context for *Vico*, as I should suppose the reference to Vico as a post-Cartesian philosopher would suggest.

I regard this sort of history of philosophy as still very much external history of ideas, though it goes beyond the examination of matters internal to the text discussed. Whether it is a "historical" or "philosophical" account seems beside the point, which is, to understand in this case, Vico. I agree that these methodological matters are "ideally" arguable and that they are not presupposed. I am therefore grateful to Dr Gorman for giving me the opportunity to clarify my position, which I realize was too briefly compressed for easy comprehension.

Yours faithfully,  
ANDREW BESELY,  
Department of Philosophy,  
University College.

From Dr H. T. Whiting  
Sir,—One expects a certain bias to appear when a correspondent is writing on a subject with which he is genuinely concerned. However, when prejudice is detected, motives might be suspect.

Your correspondent R. B. Morgan, in discussing Human Movement Studies and Physical Education, rightly draws attention to the national tendency to replace Physical Education degree courses by a subject termed Human Movement (THES, June 6). It is a statement which I would heavily endorse and which led to my commenting in a recent article. There seems to be some sort of glamour in the term human movement studies or human kinetics in which many members of the physical education profession see a solution to all their problems. By substituting the term human movement for physical education, the subject suddenly becomes academically respectable. The great curricula in fact, only lip-service is paid to the pure and applied study of human movement and the work in physical education becomes artificially constrained. At the same time, other members of the physical education profession recognize that a study of human movement can be worthwhile for students of physical education but would equally accept that such a study is not the prerogative of physical educationists and, more important, that it does not constitute the only area of interest to such students.

Had Mr Morgan's article been restricted to this topic alone he would have rightly been applauded, but to use this kind of introduction as a springboard for an attack on the fast developing field of human movement studies is both unworthy and illogically conceived. Human movement studies is not the invention of physical educationists. It was implicit, for ex-

## Land Bill

From Mr C. W. Parkes  
Sir,—Further to Mr Brock's letter on training manpower to operate the Community Land Bill, I note that he states that the existing universities and polytechnics have admitted that they will have difficulty in expanding their intake to the level necessary to provide qualified staff to operate the Community Land Bill.

In his letter he also points out that the College of Estate Management was specifically founded and geared up to provide education and correspondence courses for the professional examinations since 1919. Regrettably he omitted to mention that the college has also since 1919 taught for the external BSC (estate management) degree of London University, until the last examination was conducted in 1974.

This London degree was replaced by the Reading BSC degree in estate management, which was introduced in 1969, to which external candidates were and still are admitted.

However, the regulations and conditions governing the award of the University of Reading's degree are different and less favourable than those relating to the former London University degree, which placed no restriction on the number of attempts an external candidate may make for each part of the degree examinations.

At the same time, the estate's profession also lost out with the withdrawal of the external London BSC (estate management), and the range of subjects which a postgraduate student could offer.

May I suggest that the current shortage of training facilities can be solved at least partly by cost to the universities and the taxpayer if the Government, irrespective of the fate of the Community Land Bill, would request and provide any cash required for London University to reinstate the external BSC degree, and for the College of Estate Management to provide the necessary courses.

In this way those people who have the opportunity to study for a degree in their spare time while earning their living. This is no serious hardship since this method of preparing for the external London degrees has stood the test of time and should be actively encouraged and extended.

Yours faithfully,  
C. W. PARKES,  
Oakhurst Road, Dudley.

## Human movement

ample, in the work of Delors (1811-1871), and the eminent Russian physiologist Bernstein as early as the 1920s, was concerned with developing what he called the science of human movement.

In presenting "coffee studies" as a paradigm for human movement studies, it can only be assumed that Mr Morgan has never read any real (i.e. not physical education in disguise) syllabuses of human movement studies. Similarly, in questioning the use of such a study, he seems not only to doubt the integrity of the large body of people in this country and overseas earnestly concerned with the preparation of meaningful degree syllabuses, but to be unaware of the fact that there is a faculty of human kinetics in the University of Waterloo, Ontario, and a large department of human kinetics in the University of Guelph, Ontario. In addition to having a large number of registered students and also being over-subscribed, neither university department is concerned with the preparation of physical education students per se. Perhaps an examination of their syllabuses would prove illuminating?

Those concerned with the development of human movement studies would resist Mr Morgan's contention that an "illumination of the phenomenon of human movement" is outside the realms of possibility because of its universality. In a similar way, they would question the logic of his suggestion that a course in human movement "to deserve the name would cover the whole ground or a significant part of it".

This is as naive as to assume that those studying life sciences at degree level must necessarily study every aspect of living organisms or, in their own subject area, that every student must study every aspect of history. And what would the student of psychology be

when its leading proponents would find it difficult to delineate clearly the field of study?

Mr Morgan's analogy with the medical profession is difficult to follow. Even if all was well with the training of medical students, which even the profession might doubt, the analogy seems inappropriate. Traditionally, medical students have been faced with a diversity of discipline studies which are concerned not only to produce good general practitioners, but to provide the basic groundwork for those who wish to specialize in a diversity of related areas.

This kind of approach is in the minds of many people preparing syllabuses in human movement studies (although in so doing, they might be more influenced by the McMaster experiment at Toronto than by traditional approaches). They recognize that not only will it be impossible (because of Government restrictions in numbers) for all those who would like to teach physical education to do so, but they reflect current educational thinking in not wishing to commit students straight from school to an irrevocable course of study so early in their university/college career. Committing students to a professional course of study in physical education at 18 is as to put an unnecessary constraint on job opportunities available to them.

Those of your readers who would like to follow a more rational discussion of human movement studies and its relationship to and distinction from physical education might like to refer to my editorial and Peter Renshaw's lead article in the recently published *International Journal of Human Movement Studies*.

Yours sincerely,  
H. T. WHITING,  
8 Walsley Crescent,  
Leeds.

## Coloma

From Mr John Addison and others  
Sir,—As the staff of one of the latest small colleges of education to be closed by the Department of Education, may we make some observations.

Such closures might seem reasonable at a time when higher education is being reorganized, the birth-rate is falling and there is an economic crisis. A smaller all-graduate teaching profession emerging from large educational institutions might seem a tidy solution to a multiple problem, but it hides two serious deprivations.

One lies in the new insistence on a minimum 2 A level entry. It has been the experience of this small college that a surprising number of students with no A levels can qualify for the BEd degree. Now there will be no longer equality of opportunity for such people to enter the profession.

The other loss is less immediately apparent. Academic success alone does not make a good teacher. There is the essential quality of caring and it is in the small, concerned community where the individual is of importance that this quality is most likely to be developed. Though "caring" is not measurable its absence is felt and it is already recognized as a casualty of the assumption that in education bigger is better.

There are now in schools well-qualified, dedicated teachers who, under the new dispensation, would have no chance of qualifying. They, like many of the colleges that have produced them, would be considered inadequate.

We speak for the whole academic staff of Coloma College when we suggest that perhaps the criteria of adequacy should be reexamined.

Yours faithfully,  
JOHN ADDISON,  
JOAN HOPKINS,  
CATHERINE KELLEHER,  
JOAN KENNEDY,  
BRIAN SANDERS,  
Coloma College of Education,  
West Wickham,  
Kent.

## Earthquakes

from Dr John Gribbin  
Sir,—In his review of *The Jupiter Effect* (THES, May 16) David Blundell makes a comment which should not pass without comment. I take no exception of course, to his view of the scientific merits (or otherwise) of the book; he is entitled to his own opinion. But to say that "Californians are well aware of the likelihood of further movement along... the San Andreas" is grossly misleading.

My colleague Dr Stephen Mann is a Californian, and one of our objectives in writing *The Jupiter Effect* was to make Californians aware of the dangers they live with. As was shown, for example, by the television special *The City that Waits to Die*, inhabitants of that state are blissed out about the dangers that happen, it will be someone else, and probably not in their lifetime.

There is also the problem of attention has naturally focused on San Francisco as the site of the next great earthquake, when today it is Los Angeles that is at greater risk. So as well as scientific arguments about the danger we are concerned to make it clear that it is likely to happen here, and in the southern, not the northern, part of the San Andreas.

Incidentally, it is a little misleading to mention such work as that of Wood and Allen in this context; they discuss earthquakes of magnitude five or more, relatively infrequent, and the event of magnitude eight or so which is likely to take place in the southern San Andreas in the not too distant future.

It is quite possible that we may see both a magnitude five event near Hollister in 1978 and a magnitude eight event as discussed in *The Jupiter Effect* a couple of years later.

Yours sincerely,  
JOHN GRIBBIN,  
Cotter Terrace,  
Brighton.

## Project data

from Mr J. R. L. Swain  
Sir,—As a further comment to the letter of S. W. Hocky (THES, May 30) you may be interested to know about some of the data we have been collecting in connexion with the Physical Science Education Project at Chelsea College.

One of the aims of the project was to broaden the sixth form curriculum by opening up the possibility of sixth formers doing an arts subject with physical science. Over a two year period (1973 and 1974) we found that approximately 10 per cent of the candidates who entered the examination took approximately 70 per cent of the non science subject.

Of these candidates who offer one non science subject 27 per cent go on to do some form of science at university, but only 11 per cent go on to do an arts or related course at university. Less than 1 per cent of the candidates who do two science subjects go on to do science at university.

It appears that the flexibility of the timetable which is present at Marlborough College may either be an isolated case or more likely pupils still favour the traditional path of the traditional (three science/mathematics A-level) course in sixth schools.

Yours faithfully,  
J. R. L. SWAIN,  
Willow School,  
Wallingford,  
Surrey.

## Comprehensives

from Mr Guy Neave  
Sir,—In reply to Mr Hocky's contribution of some of the findings of *How They Fare: The Impact of the Comprehensive School upon the University*. It is a doubtless comforting for the parents of those children at one public school to know that they too will have some of the benefits which are widely available in schools with open sixth forms especially when fees will be even higher than in public schools.

Yours faithfully,  
GUY NEAVE,  
Centre for Educational Sociology,  
Edinburgh University.

## Don's diary

## Out to work

Brunei on a summer day. Where are the students, as a visiting journalist asked three summers ago? The fourth year is doing exams. Students in the first three years are out on work placements; Brunei is a sandwich course place, even for social science students. The staff follow the students to supervise the work placements. Vicarious living for social science dons—I have actually been to one building site. At least I learn the going rate for various public sector jobs. Building work beats them hollow.

John has persuaded a London borough to back a building cooperative that would set out to train youths in building trades. He started by doing some building work to raise a minimum of capital. Then he set up a company; ironical some weeks back to find him, a dedicated opponent of capitalism, enmeshed in the details of company promotion. Now he is busy with satisfying government departments that the cooperative meets the criteria laid down for training grants.

I pick John up at the building site and meet his founding partner, but not the immigrant trainee who still has difficulty getting up in the morning. John gloomy about the coop's prospects once he returns to Brunei in October; furious about the legal and insurance difficulties overruling an immigrant 15-year-old, a notorious trust who is not wanted back at school. The borough's social services department is doing its best, but insurance cover of up to £250,000 may be required; and who can face the premium on that?

Robin is working with a voluntary but government grant-aided agency. A mature student with a background in social work, he has been asked to review the activities and structure of the agency. The director and his deputy are new, both with clear ideas of how the agency should develop. Robin's brief gives him enough independence—partly so that he can be "disavowed" if necessary. The usual consultant's

of 1968, whereby the government of institutions maintained by local authorities is determined by Statutory Instruments and Articles of Government which demarcate the powers and responsibilities of the managing authority, the governors and the academic board.

The system is modelled partly on the arrangements for voluntary aided schools and colleges and partly on those of the red brick universities. It began to evolve in the mid-1950s in the colleges of advanced technology; it was strengthened by the comments of the Robbins committee in 1963; and it was spelled out in the Weaver report of 1966 and in subsequent circulars and advice from the DES.

It is timely to review it now for several reasons: the current state of college amalgamations involves reorganizations of college governance in local government, which have raised new problems and upset existing understandings; the Taylor Committee on School Government will inevitably take stock of the college experience; and finally, perhaps not least, the experience of the polytechnics, and the time has come to review their experience of the system and are seeking its further development.

To those who remember the 1950s in the colleges the changes have been dramatic, indeed, incredibly so. When I was first involved in the Association of Teachers' Technical Institutions' campaign for reforms in college government, the representation of teaching staff on governing bodies of colleges, even those engaged in degree work, was to us a distinct prospect and a heresy. The prospect of colleges as "officers-in-attendance" staff

appointments were generally made by a committee of local councillors with the principal and perhaps a head of department in attendance. When, in 1959, Middlesex County Council decided, as a pioneer, to permit representatives of the teaching staff they were told by a deputation of college principals that this would destroy all the work they had been doing for years! When, at about the same time, Brunel College took the bold step of establishing an academic board, every one of its members was nominated by the principal. Most of the colleges of those days were governed like the schools and many further education colleges today.

The reforms were started 20 years ago when the involvement of industry in college management was part of the development of sandwich courses in technology. They were accelerated by the influence of the National Council for Technical Awards, the predecessor of the CNA. But the real turning-point was the publication of the Weaver Report on the government of colleges of education.

The political circumstances of this report are important. To say that many local authorities were not keen on it is an understatement. The fact is that the reforms were the price they had to pay to retain their status in higher education.

The Weaver Report was a deal. If the leaders of the local authorities had not agreed reforms along these lines they would have lost the colleges of education, and immediately the polytechnics subsequently.

This is not flippant teasing, but a serious proposition that is germane to some of the most difficult problems confronting education and democracy in this country at the present time; and both are in jeopardy.

## Turning back the clock on l.e.a. control



ERIC E. ROBINSON

Our system of polytechnic and college government, for all its faults, constitutes an experiment that has had remarkable success. It is a development entirely consistent with the English tradition which is attractive and is worthy of widespread international interest.

Its implications are important in the continuing debate about the future of local government in this country. Its experience is probably more important for the future of our schools and universities than they realize.

I refer to the system, formally embodied in a minor Education Act

role, but Robin comes cheaper. The report will go to an annual meeting of agency personnel. Robin will have to judge the agency's internal policies with some skill not to be disavowed. Is he really as unworried about that risk as he claims? He will at least end with a good academic project report out of this work placement, and already written up before his final year begins.

Christine is a temporary on the staff of the education department of another London borough. A natural for that borough, Christine is a West Indian, a mother of two young children. The department is making sensible use of her in organizing summer play activities. It gives me mixed pleasure when the division head says he would like to hire her permanently now; this is only her first placement.

Christine is fully occupied and there is a job to do. But I am stuck yet again with the size of the staff in an education office. Come home and complain for twelve months that the *Times Educational Supplement* ought to publish a simple table giving numbers of (a) school children, (b) teachers and (c) educational administrators in 1935, 1945, 1955, 1965 and 1975. Would I if I could at least do that for LEEA and make a note to look out the set of LCC statistics the library recently bought.

## Among Mandarins

To lunch in Whitehall—or rather in the Charing Cross Road since the Civil Service block drives out reasonable food. Jack is an old Treasury hand, in exile and despair. Seafood salad and public expenditure.

We decide the Universities Grants Committee has shown the way to hold down public expenditure. Pleased by cynical hostility that the decayed old UGC, for so long the dustbin for failed Treasury men, should be capable of that. But we could control even local authority expenditure on the UGC basis. This has amounted to giving universities projections over short periods that ignore inflation, along with a commitment to do something but by no means everything to compensate for inflation. And how the universities have screamed. And how they have cut costs.

The UGC can tell universities that a science-based student should on average cost £600 per annum. Why should not central Government tell local authorities to meet

appointments were generally made by a committee of local councillors with the principal and perhaps a head of department in attendance. When, in 1959, Middlesex County Council decided, as a pioneer, to permit representatives of the teaching staff they were told by a deputation of college principals that this would destroy all the work they had been doing for years! When, at about the same time, Brunel College took the bold step of establishing an academic board, every one of its members was nominated by the principal. Most of the colleges of those days were governed like the schools and many further education colleges today.

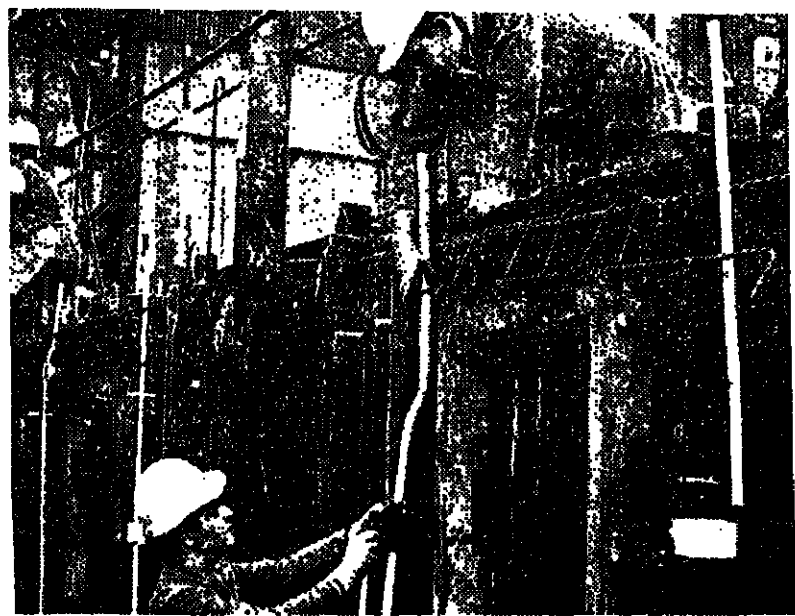
The reforms were started 20 years ago when the involvement of industry in college management was part of the development of sandwich courses in technology. They were accelerated by the influence of the National Council for Technical Awards, the predecessor of the CNA. But the real turning-point was the publication of the Weaver Report on the government of colleges of education.

The political circumstances of this report are important. To say that many local authorities were not keen on it is an understatement. The fact is that the reforms were the price they had to pay to retain their status in higher education.

The Weaver Report was a deal. If the leaders of the local authorities had not agreed reforms along these lines they would have lost the colleges of education, and immediately the polytechnics subsequently.

This is not flippant teasing, but a serious proposition that is germane to some of the most difficult problems confronting education and democracy in this country at the present time; and both are in jeopardy.

To be fair, a minority of the L.E.A. leaders thought the game was worth the candle and were willing



Rates for building work beat public sector rates hollow.

equivalent cost norms for their services? Can't be done. Jack reports—official committee says so. We sigh for a politician who could recognize that goose and boot it.

Thence down Whitehall and to the National Liberal Club to visit a more traditionally politics placement in the Liberal International. Winston is compiling a comparative guide to the policies of Liberal parties outside the EEC. Learn about the policies of the Liberal International. What is a Liberal party in, say, India? Or in Israel? Two years ago a Brunel student helped with a similar guide to EEC Liberal parties. Buy a copy of that guide and make a note to review the library holdings on the political systems of smaller European states.

On my way out notice that Aile House, the headquarters of the Labour Campaign for Britain in Europe, was two adjoining rooms in the basement of the National Liberal Club.

On my way home I stop off at Belgrave Square, the post office of the Minister for the Arts. My bus, however, is right at the top, in the servants' quarters, with the Library Advisory Council (England). This pompously named body is meant to advise the Secretary of State on library matters; its terms of reference cover the national and academic libraries as well as public libraries. A sub-committee "covers" the work of a dedicated statistician in trying to establish what the nation spends on libraries. Our best estimate for 1975/76 (at 1974 survey prices, purists will not know) is £14m on national libraries, £40m on academic (including all higher

education) libraries, and £93m on public libraries. So more than a quarter of the nation's spending on libraries goes to higher education; and of that, half goes to universities. Time, perhaps, for some university librarians to consider how adequate a reference to their local communities. Would Philip Larkin at Hull agree?

To many cooks  
Tutorial day brings the students back from their work placements to Brunel. We organize seminars, two for students in public sector jobs. A colleague takes one for students working in education and the social services. The 10 students in my group range over central government departments and the local authorities.

We discuss the current cry against overstaffing. Of the 10, only one has seen no evidence of this. Anne, whose work has taken her round the central administration of a local authority, is depressed by the rampant empire building.

Why do we accept a management theory of a span of responsibility that promotes bureaucracy who overstaff their departments rather than those who get things done? I suggest that the institutionalization of a civil service department may account for this; its definition lacks any criteria for judging its performance, and can therefore indulge in reckless theory spinning. Knowing smiles greet this Treasury prejudice. I look forward to next year's courses with these students; they will have some experience of government-to pit against mine.

To lose the colleges rather than retain them under loosened control. Less worthy of respect were those L.E.A.s that acquiesced in the deal and subsequently wretched on it or pretended that it was all a glacially misunderstanding.

This is worth recalling because some of the new authorities are now trying to turn the clock back. Recently I have been variously assured that Weaver is outdated by local government reorganization, the Bains Report (on local authority management), the Industrial Relations Act and the economic crisis. No doubt some guardian of the parish pump will shortly explain that the reformation of the price of petrol has rendered academic freedom null and void.

A deal is a deal and the day the Weaver reforms are pigeonholed the question of local authority control of colleges goes back on the table. We have the ideal man in post to make that clear: the Secretary of State responsible for local government, none other than Anthony Crosland, the man who negotiated the deal in the first place.

Bains and Weaver survive, not merely as optional pathologies, but as men, reported alive and kicking. Crosland should invite them to lunch and set them to work to write a short postscript to their reports. This should explain that the problem of reconciling public responsibility, managerial efficiency and academic freedom is susceptible to intelligent analysis and solution.

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Jane has rung to fix a tutorial. She is a first year student from Neasden, complete with Private Eye blusher, two children and a supportive London Transport husband who is an active trade unionist. Her husband has helped with the children enough to free her for a student timetable; but he could not manage the times for any work placement we could find her.

As it is her first year, we have reluctantly compromised. She will do some tamping, which she has arranged locally to fit in with the children, and continue with some more formal academic work. Presumably her husband's trade union work this summer will keep her closely in touch with public affairs.

Nevertheless young mothers will be a growing problem for us. Brunel represents a later chance of going to university for a huge number of married women over most of the last century of Midsex. Can we find a large enough number of suitably flexible work placements to meet their family needs? After all, governments are not like sociology, which my colleagues tell me can be studied anywhere.

## Placement plight

We worry, too, about whether we can continue to find enough placements anyway. Local authority finances will get tighter. Are Brunel students on work placements the dispensable fringe or are they cheap labour during the summer season? The next two seasons will show.

Meanwhile placements change with fashion and style in public administration. The survey of needs under the Chronically Sick and Disabled Act is over; it seemed as though half the work was done by Brunel students. Now that vehicle and driving license administration is being centralized in the (devolved) Swansea office, Brunel no longer supplies that division of the GLC with Easter to August labour.

Awful Doltbeys Hall work, you may suppose. In my first year at Brunel I have had eight such placements to supervise; and sent the students to Doltbeys Hall on *The Bureaucratic Phenomenon* and hoped for the best. To my amazement I found morale high and as much interest in how to organize that work as the Treasury's fiscal policy division. I have shown a high standard, former colleagues will say but still something learnt about public administration.

David Shapiro

The author is reader in government at Brunel University.

ardly, not merely in the colleges but much more extensively. The challenge of increased efficiency is immediate, and dangerous if we do not respond to it quickly and positively. If we cannot reconcile efficient management with our ideals and our mission, we must not assume that in the resolution of the dilemma our ideals will prevail.

The advocates of democracy inside colleges and universities frequently overlook the fact that to the majority of people there is a more important democracy of the whole population outside and above them. It is a superficial view indeed of the Weaver reforms that regards them as merely a gage in the advance towards complete academic autonomy. They are a tentative basis for a realistic reconciliation of interests, rights and responsibilities of academics, students and the world outside the campus.

If the colleges do not work to build up confidence in the system they may find themselves under attack. If the local authorities do not play their part they may lose, not merely a few colleges, but the whole of education as well, because increasingly parents and school-leavers are inclined to ask for their share of academic freedom.

Local authority managers who glibly insist, as some are reported to do, that education is an unvarying different from any other service they control are merely strengthening a demand to take education out of local government. A tradition of more than 2,000 years that education is different from sewerage and rubbish collecting will not be lightly set aside by the people of this country. They may have 1950s moments but they still have a bit of sense.



## A day with the CNA—'guardian of academic standards'

Scenario: James College of Education, one of the best in the country, has merged with a polytechnic. It was decided to seek validation from the Council for National Academic Awards for a Diploma of Higher Education and a Bachelor of Arts degree.

So, in common with many of Britain's former colleges of education, James College has entered new and unfamiliar territory.

The result, drawn up over six months, comes to six volumes and nearly 400 pages, a comprehensive introduction to the college, the polytechnic, their staff, the origin and aims of the programmes, admission requirements, the structure and organization of the courses, the conditions of the staff, and included the library, reading lists, and so on.

The college wants to put on a DipHE and a BA (Humanities) degree, with options in English, history, geography, religious and moral studies, the individual and society, French, art studies, music and supporting studies. It will be a modular course: six 165-hour modules for a DipHE and eight for a BA. Students can take either three or four subjects, reading at least one subject throughout the three years of the degree but able to choose from five combinations of subjects in the final year.

If such a procedure is unfamiliar to most colleges, it is also unfamiliar to most universities. Many academics, indeed, must wonder why so much fuss is made about the merits of the CNA and why a few commentators suggest that university courses should be subject to equally searching scrutiny.

So that *THE TIMES* could answer such questions and see the CNA in action, the council recently allowed me to join a visiting party of the Combined Studies (Humanities) Board, under the chairmanship of Mr Bill Gutteridge, director of complementary studies at Aston University, as an observer when it went to "James College". It was, as they say in school essays, a fascinating and exciting day.

Our party of 15 was made up of six people from universities, five from polytechnics, and four from colleges. There were specialists in eight subjects, two members of the DipHE panel of the CNA, and two senior members of the council's staff from London. Each had received a bulky folder from the CNA. One document recalled that a visit had been made to the college in October, that members had been quite favourably impressed by some of the staff, and included two pages of their comments on the proposed course.

It was noted, for example, that members would want to discuss the overall weight of the course in terms of student workload and the distinction proposed between the honours and unclassified degree. Members had considered that one of the courses was overloaded and that some of the proposals for "integration" were perhaps rather "far fetched".

The Board had agreed nevertheless that there was a prima facie case for a visit to the college and potential for the development of a satisfactory course, although the staff would need to accept that the end result might be a more streamlined course than the college proposed.

As the visiting party was driven to the college, hundreds of hours of work were therefore about to be scrutinized to see if they were worthy of the CNA seal of approval. Even as we entered the college, the tension was palpable.

A CNA visiting party meets first in private to agree on the questions to which it will seek answers during the day. Some of them during our visit were:

● What were the consequences of the merger for staffing? Could academic standards be maintained in the newly formed polytechnic? What kind of departmental structure was envisaged?

● What was the college's genuine attitude to the DipHE? Was it, for instance, a diploma course or was it simply two years of a degree masquerading as a DipHE?

● Would the student groups be viable when, for instance, a first year entry of 50 was offered eight options?

● The proposal was for short "fat" modules: would this system allow the students to mature and would it give them "spaces in-between" a tightly scheduled academic programme?

● Why were art studies included? Was it simply because there was an art department?

● How did the college arrive at the apparently clear objectives to each syllabus? Did they question the notion of a general education in the humanities?

● Did the college really intend to assess two thirds of the degree with only 100 of the total of 500 marks? Were 3,000 word essays too long?

Eleven members of the new polytechnic's directorate and senior staff were then invited in to meet the visiting party. They were given 30 minutes about the administration of the polytechnic, the consequences of the merger, the responsibility for the direction of courses, any staff tensions, and student welfare. After this about 20 staff crowded into the room and answered questions for another hour. The panel then visited the library, noting, for instance, that there were only 600 books in

the history section. The "investigation" continued informally over lunch until it was time for a 90-minute scrutiny of individual departments and their staff by the specialist members of the panel.

I sat in on the examination of the English department, which was frank and open about the main criticisms from the visitors was that the students would be forced too hard, that there would not be time for them to read some of the texts sufficiently thoroughly, that the programme was too prescriptive, and that students would be exposed to too many experiences simultaneously.

The climax of the day came at 3.30 when the panel met in private to decide whether the CNA should approve the college's proposals. There were critical reports on some of the proposals and the DipHE, mainly based on the quality of the staff, deficiencies in the library, or the structure of the course. The criticism of the DipHE was that it was not a genuine two-year programme, that no thought had been given to intake and outlets, and that the college and the polytechnic had not got together to consider the Diploma.

Among the other reports were: English. The staff could teach the course but they were overloading the students and being too prescriptive. The syllabus should be loosened.

French. Staffing impressive, adequate course. What, however was the policy of the board about the role of language: either it was a significant subject within a group of options, in which case it should be given proper treatment, or it was ancillary.

Geography. Staff better than their course. They had not thought out

the step to honours level, two syllabuses would need revision and the library was only just sufficient. There were criticisms, if promising, reports on music and history, as well as the possibilities for supporting courses in political science, mathematics, visual communication and social biology. All these reports would be supported later by detailed comments sent to the college by the CNA in London.

So to the chairman's summing-up, a "searching of consciences" and eventual agreement that the college should be given approval to put on a BA humanities degree with options in English, French, geography, history and music. Some strict conditions were added, however. The college, the panel agreed, should think again both about its "ill-digested" plans for examinations and assessment as well as the role of the dissertation, and the syllabuses in English history, music and geography. It could nevertheless go ahead with a degree.

Several thoughts remained for this observer. If James College was at all typical, many colleges may be tempted to draft their proposals to flatter the CNA that they have read all the right textbooks on the curriculum and are familiar with the curious use of high-flown jargon and what passes for prose among some curriculum developers. CNA visiting parties are not misled by the approach.

Secondly, the CNA deserves its reputation as well as the central position it now occupies in the development of the civic sector of colleges and polytechnics. It forces staff to think seriously about what they are teaching and why. Above all, if the visit that I observed was typical, it is a guardian of academic standards, which is worthy of emulation elsewhere.

In its well-produced 24-page prospectus "The University of the Science of Man" offers a "newstyle learning", 14 courses, or a gold-bonussed International Academic Pursuit. The prospectus starts with the Chancellor's foreword: "Adult education in the world today has taken a turn for the better. More and more people are realizing that education paves a way for a better life, offers a helping hand to those who are in need. Knowledge breaks down all barriers of colour, creed and belief to the common aim of supporting progressive material improvement."

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There are rail, sea, and ferry concessions, too. B and I (to the Irish Republic), Hoverlloyd (hovercraft between Ramsgate and Calais), and Prinz Ferries all offer big student reductions on normal fares, and British Rail do special rates to Paris.

The cheap "Eurotrain" system is also being advocated—with rail fares showing a big saving over even cheap student air fares. For example, you can still get to Athens by train for £33.95 and break the journey en route to visit places of interest. And once in Greece, of course, the very cheap item—Island ferry services cover the entire Aegean and visitors can enjoy "islander" homes for about £1.5 a night. There are also cheap bus services to Greece, operated by people like Pimlico Travel (36 Bury Street, London SW1).

You still cannot afford it? The NUS Travel have something for their sleeves which may yet tempt you: a trip to Brussels for only a little more than £5. "Perhaps students choosing that trip might want to get some sort of job in Belgium for a few weeks," suggested Mr Phillips.

"The point is that after the hard slog of the year a student can get away on holiday for just over £5."

British Airways offer reductions of up to 60 per cent on ordinary tourist fares—with Turkey (60 per cent), Greece and Hongkong (both 55 per cent) the biggest bargains this year.

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Another popular play with the impetuous is the working holiday which has been arranged in addition to Scandinavia this year, as well as in Israel's over-popular kibbutzim. But a grape-picking holiday in the Beaujolais region of France seems likely to top the popularity parade by the end of the season.

For groups, the Youth Hostels Association (Trevelyan House, 8 St Stephen's Hill, St Albans, Herts) can be very helpful with holiday planning and they too have work-camps and they take holiday suggestions and like to take their applicants' special skills into account. But even their ingenuity was stretched recently when a group of student midwives asked for a working holiday in Europe.

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Irish towns officials who have watched the number of visitors from Britain slump alarmingly in recent years.

But not every youngster has his heart set on a trendsetting holiday. "It is quite surprising—some of the traditional package holiday resorts are still popular with students and with young people in general," says Mr Baron Phillips, "Majorca. Young people have the reputation of being esoteric, but they are just like everybody else when it comes to the attractions of sun, sand, and sea."

Despite their financial difficulties, students seem determined to have a holiday of some kind. Mr Phillips explained: "Everybody has different priorities. Some students spend nothing on clothes—or food—if it comes to that—all year, and save for the summer when they just want to get away to the sun for as long as possible."

And even if they do not have the money, many students seem quite prepared to spend whatever cash they can raise on a one-way ticket to the destination, of their choice, and then rely on earnings from a part-time holiday job to pay for their keep. For these ad-

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TIM ALBERT concludes his investigation into the scandal of unrecognized academic qualifications

## Out on the campuses with a few familiar names

A country house in Sussex; a block of flats in north London; a rented terraced house in Coventry; a razed street in a slum clearance area in Sheffield. These are the improbable sites for such seemingly learned institutions as the "Sussex College of Technology", the "University of the Science of Man" and "Brantridge Forest School".

All of them are unrecognized institutions which supply their own unrecognized—and therefore apparently worthless—degrees.

A tour of their campuses shows just how difficult it is to find out who are the people behind them.

Bruce Copen, who claims variously to have a PhD, D Litt, and to be a FBR (whatever that might be), is a former RAF corporal. Today he combines the posts of Chancellor of the "University of the Science of Man", Dean of Studies of "Sussex College of Technology", and principal of "Brantridge Forest School".

The addresses of all three are at Highfield, Donhill, Sussex, which is a village in the parish of Hove. It also happens to be Mr Copen's residence. It is a large and handsome house, with a large and well-laid out garden, a small lodge at the end of the drive, and miniature stone lions on the gateposts.

Mr Copen had already slammed the door on John Evans (see "Daisy Dr Copen Slams the Door" in the *Guardian* July 6, 1973), and he slammed the phone down when I telephoned for an appointment. A few days later I visited his house with a photographer. The gardener said there was somebody in—but nobody answered the door. There was no sign of college life.

This was not unexpected. "Dr" Copen stresses in his prospectuses that casual visitors cannot be entertained.

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Therapy—a very unusual branch of ESP science in which, with suitable equipment, one may study and manipulate the known radiation fields in and around us—for £48.

An interesting buy seems to be the course leading to Doctor of Humanities (DHL) and costing £63. "This is a series of discourses on matters and problems relevant to our time, both personal and general, in order to stimulate thought—perhaps even ardent disagreement—with the desire to help to develop a responsible approach relative to the present day. . . . These discourses are deliberately brief in comparison to some, as in these subjects it is felt that over-readiness is liable to obscure rather than clarify the issue." (our italics).

The prospectus then lists graduation certificates (with the extract for a Latin version) and awardment forms. There are easy ways of paying. Then there is the International Academic Passports, which entitles the holder to have periodic newsletters from the university and a free two-year subscription to its quarterly magazine. "The passport issued will be the same size as your regular one, cloth bound in maroon, with real gold blocked crest and lettering. The contents will include: one copy of your photograph, destamped, the name of your university, your name, and the word 'Licentiate' in beautiful hand-engraved, in addition, particulars of your academic record may be included." Cost: £20.

The staff list for "Sussex College of Technology" has a familiar ring. "Prof" Bruce Copen is the dean, B. De Leroy is executive secretary, F. Frogley is charge of student records, and "Lucy" Copen the registrar.

Some of the professors of the "University of the Science of Man" reappear with different specializations: Lee Ah Bah turns from diet and nutrition to philosophy of education; Richard A. Copen from chromatography to economics; Wolfgang Scheel from biochemistry to technology adviser, John E. Clements from technology to administration, Jose J. Barbarosa from anatomy and physiology to psychology adviser, and Karl Hoffman from naturopathy and dietetics to business studies.

The brochure continues: "The postgraduate awards as listed are offered to those who desire to obtain some mark of achievement in their chosen areas of work or progress. No study courses are involved, the awards being issued upon satisfactory application to the board of examiners, with proof of previous study or proof of similar certification or thesis towards the degree required."

If the applicant is in doubt as to his/her acceptability for these extension degrees, all papers should be forwarded, with covering letter and evaluation fee (£25). Every applicant is given strictly personal attention by the dean of the college.

The student may be aware of the growing interest in such subjects as business, economics, management, etc. Therefore degrees under these subjects may be obtained such as business administration, business management, economics, education, biological science. If the student cares to read our courses curricula this will show the degrees we can offer without further study (our italics).

Other subjects on offer include philosophy, science, arts and science, literature, humanities (including services to helping others) psychology, homeopathy, hypnotherapy, naturopathy and domestic medicine. Fees, which are in four currencies, include £125 for a doctor's degree. A warning, printed in red ink, says that the awards are "not-recog-

ties in the United Kingdom—and therefore their use may be restricted to non-academic activities to which they may be put."

"Brantridge Forest School" was advertised in the American magazine *Popular Mechanics* as recently as March, 1974. Since then its name has appeared on a Council of Europe list of unrecognized institutions, and four months after we had written from the United States for details, we had not received a reply.

Sydney Lawrence claims to be Knight of Malta, the Duke of do Nevillay or Nevillay, and president of a college whose history goes back 50 years. His brochure says: "The College of Applied Science Graduate Division was formed by leading citizens under the leadership of the present Duke of Nevillay and was established by those who were concerned about quality, efficiency and relevance of higher education in today's world."

The college operates from what appears to be a block of flats at 3 Minster Road, Kilburn, London. A few miles away, Lawrence lives in a smart house opposite a school in a quiet tree-lined street. His address is 78 Christchurch Avenue, Bromley, Kent. When we called a woman in an overall told us that he was away at a conference. If we wanted to see him we would have to make an appointment in a couple of weeks' time.

Lawrence replied to our inquiry with a prospectus for the "College of Applied Science, London", and a circular letter. The prospectus is not so well produced as "Dr" Copen's: it consists of 12 pages of tightly packed print gummed on to a black cardboard cover with gold lettering on the front. There are a number of spelling mistakes.

By concentrating on characteristics essential to meet the critical issues confronting man in the modern world, College of Applied Science, London, England, students will be well equipped to be leaders in labour, the Church, cooperatives, industry, government and education who are creative and useful to their fellow man. With attention given to brainware rather than hardware, scholarship is encouraged and the educated man is produced without mental blinkers which prevent him from discerning truths outside of one field or discipline."

However, the real message is contained in the circular letter. "I presume that as you are not residing in England you will not be able to attend the college personally and under the circumstances would be Degrees. Unfortunately we do not run correspondence courses as such for you will no doubt appreciate courses of this kind could be copied from books and a true status of the student in question could not be obtained."

"As we are a private college and do not come under any government grants and being a non-profit organization we have to rely on the fees of students to keep up our heavy expenses. It is with this point in view that the College is prepared to award an honorary degree due to the circumstances now prevailing [sic]."

"The college will therefore consider an application from a student who has the background or qualifications such as a degree from other colleges or universities, or a person who has been outstanding in their particular field. The college can issue any degree that you may be interested in after having received further information from you we shall be pleased to assist you in any way we can."

William Duncan is a former lorry driver who operated a firm called International Status Symbols from University House, 255 Humber Avenue, Coventry. For £12.50 he would furnish a wide range of degrees from the University of Coventry to the Nebraska College of Physical Education.

However, the University House, a small end-of-terrace house which Duncan rented, is now up for sale. And, according to the shop next door, the estate agents, and the Post Office, he left no forwarding address.

Charles Brerley, now in his sixties, used to operate the "Ministry of Training College" and the "National Ecclesiastical University" from 67 Ditchingham Road, Sheffield. The house has now been pulled down, little has been heard of him recently, and it seems that he, at least, may have stopped his grant-

## Where do all the students go in the summer time?

"If you are a student, you are the most privileged traveller in the world," says an executive of NUS Travel, the biggest of the student travel bureaux, which is owned by the National Union of Students. And the huge range of travel concessions, and cheap inclusive tours and destinations, available to students this year add weight to the claim.

The student charter flight network now covers most of the world, and fares are usually only about one third of the normal fare. Demand is such that holiday "seasons" are a thing of the past. "We used to arrange our flights to fit in with things like university terms," says NUS Travel, "but with so many students wanting to go overseas, and so many overseas students travelling too, it is now an all year round business."

But the summer vacation is naturally still the holiday peak, and students are now busy looking through special brochures like the NUS's *Student Traveller* or trying to obtain an independent venture during which they can make use of the travel concessions and accommodation advice offered by student travel bureaux in major cities all over Europe.

Mrs Uchit Wolfenden, manageress of the NUS Travel offices (Clifford House, 117 Euston Road,

London, NW1), says: "As far as our inclusive holidays, which have been very popular, are concerned, the holiday which appeals to the student is the one that they are not going to find in a Thomson brochure—camping, for example, or caravanning in Ireland."

"Students like to meet people of the same age and the same interests on holiday, so that is what we are selling them."

So far this year the three most popular holidays as far as bookings through NUS Travel are concerned are Corsica (they have a 14-night camping holiday on the island for £47, including return air travel and the use of a tent, but excluding food), the United States, and the Greek Islands.

Greece, has received a boost through offers like one which can be found in the Thomson brochure and which might have been tailor-made for students: "Wanderer" package holidays where the price includes the flight but, instead of hotel accommodation, a set of vouchers which can be used to obtain a bed in various hostels. This brings down the price for a one-week holiday in, say, Rhodes to £69, or £87 for a month.

Hiring Romney caravans in the Irish Republic is also "in" this year—a trend which will delight Irish towns officials who have watched the number of visitors from Britain slump alarmingly in recent years.

But not every youngster has his heart set on a trendsetting holiday. "It is quite surprising—some of the traditional package holiday resorts are still popular with students and with young people in general," says Mr Baron Phillips, "Majorca. Young people have the reputation of being esoteric, but they are just like everybody else when it comes to the attractions of sun, sand, and sea."

Despite their financial difficulties, students seem determined to have a holiday of some kind. Mr Phillips explained: "Everybody has different priorities. Some students spend nothing on clothes—or food—if it comes to that—all year, and save for the summer when they just want to get away to the sun for as long as possible."

And even if they do not have the money, many students seem quite prepared to spend whatever cash they can raise on a one-way ticket to the destination, of their choice, and then rely on earnings from a part-time holiday job to pay for their keep. For these ad-

venturous travellers, hitch-hiking is the most usual mode of return transport at the end of the summer.

Another popular play with the impetuous is the working holiday which has been arranged in addition to Scandinavia this year, as well as in Israel's over-popular kibbutzim. But a grape-picking holiday in the Beaujolais region of France seems likely to top the popularity parade by the end of the season.

For groups, the Youth Hostels Association (Trevelyan House, 8 St Stephen's Hill, St Albans, Herts) can be very helpful with holiday planning and they too have work-camps and they take holiday suggestions and like to take their applicants' special skills into account. But even their ingenuity was stretched recently when a group of student midwives asked for a working holiday in Europe.

Besides the packages organized by student travel bureaux, students qualify for a whole range of travel concessions—usually upon production of a student card.

British Airways offer reductions of up to 60 per cent on ordinary tourist fares—with Turkey (60 per cent), Greece and Hongkong (both 55 per cent) the biggest bargains this year.

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# NOTICE BOARD

## Chairs

**Mr John Anthony Barrow**, fellow of Jesus College, Oxford, and university lecturer in English, has been appointed to the Wintercourse chair of English. Mr P. A. Edlison, deputy director of the School for Advanced Urban Studies, Bristol University, has been awarded a personal chair. Professor Ian Baxter, professor of law in the University of Toronto, has been appointed visiting professor in law. Dr Gordon E. Russell, head of the pathology and entomology department of the Plant Breeding Institute, Cambridge University, has been appointed to the chair of agricultural biology at the University of Newcastle upon Tyne.

## Grants

**Edinburgh**  
Human Genetics—£2,352 from the Association for Spina Bifida and Hydrocephalus for research on automated diagnosis of spina bifida, under the direction of Dr D. J. H. Brock; £9,543 from the Muscular Dystrophy Group of Great Britain for continued support of biochemical and genetic studies in muscular dystrophy, under the direction of Professor A. E. H. Emery. Medicine—£1,911 from the Brompton Hospital for research on the effect of anticholinergic bronchodilators in man, under the direction of Dr D. G. Vennart; £42,945 from the Medical Research Council for research on the relationship between lipid metabolism and dyslipidaemia during myocardial infarction and infarction, under the direction of Dr M. P. Oliver. Animal Health—£2,415 from the Cancer Research Campaign in continued support of an investigation of plasmacytoma, under the direction of Dr P. Imbali. Architecture—£9,400 from the Department of Environment to implement an existing computer system in the design work of the Property Services Agency, under the direction of Mr A. R. Hill. Veterinary Medicine—£18,201 from the Horserace Betting Levy Board in support of an investigation of possible causes of chronic respiratory dysfunction in the horse, under the direction of Mr E. A. McPherson. Chemistry—£91,000 from Imperial Chemical Industries Ltd. together with supplementation for initiation to support a collaborative research project on heterogeneous catalysis under the direction of Professor C. Kemball; £4,030 from the Tioxide International Ltd. for research under the direction of Professor C. Kemball and Dr H. P. Leach; £4,030 from Tioxide International Ltd. for research under the direction of Professor C. Kemball and Dr W. D. Cooper. Molecular Biology—£61,798 from the MRC in support of research on the control of gene expression under the direction of Dr I. G. Scatchell. Physiology—£16,848 from the MRC for research on the effects on the surface of excitation and conduction in procedures, under the direction of Professor W. E. Watson. Animal Genetics—£11,750 from the MRC for research on the effects of hyperthermia on transitional cell carcinoma of human bladder, under the

## Appointments

**Universities**  
**Bradford**  
Proancellor: Mr A. J. Thayer (re-appointed three years). Temporary lecturer: Mr R. A. Love (Project Planning Centre). Research Fellow: Mr A. K. Ratnatunga (systems dynamics). **Leeds**  
Provice-chancellor: Professor W. Ashworth. Reader: Dr M. P. Costello (Spanish). Dr A. J. Bailey (biochemistry). Meat Research Institute: Dr R. J. W. Byrde (plant pathology). Long Ashton Research Station: Dr C. J. Pennington (biochemistry). Dr D. J. Pennington (zoology). Dr A. P.

**Newcastle-upon-Tyne**  
Provice-chancellor: Dr E. S. Page. J. R. O'Callaghan. Deans: Professor D. A. West (faculty of arts); Professor H. B. Berrington (faculty of economics and social studies); Professor D. W. Elliott (faculty of law); Mr K. Rockett (faculty of education); Professor J. Ashton (faculty of agriculture). **William Leech Readership**: Oliver F. W. Jones (geriatrics). Lecturer: R. H. Williams (town and country planning). SRC Senior visiting fellow: Professor E. Sulubi (department of engineering).

## Course news

**"Airport Planning and Design"** a four-day course presented by the Centre for Transport Studies of Cranfield Institute of Technology and the Department of Transport Technology at Loughborough University of Technology, will be held from July 14 to 17 at Cranfield. The course is designed to cover all major aspects of airport planning and design from both a theoretical and practical viewpoint. Fee: £100.

## Recent publications

**Directory of European Journalists**, newspapers and reviews specialising in Education is published by *European University News* as a supplement to *Education*. It gives a list of specialist contacts in education in countries of the EEC. Available from: Nouvelles Universitaires Europeennes, 2 Rue Merimee, 75782 Paris Cedex 16.

**Chemical Engineering and Technology Research Report**, produced by the Science Research Council provides information and a summary of research results of some projects funded by the council. Available from Mr I. L. Armitage, Public Relations Officer, Science Research Council, White House, High Holborn, London WC1E 6BT.

**Social Implications of Spina Bifida**, by Margaret Woodhouse, is a study which looks at the social and practical problems facing parents bringing up a child with spina bifida. Problems which have changed greatly in the last few years. Published by the National Foundation for Educational Research, 2 Jennings Buildings, Thames Avenue, Windsor, Berks.

**General**  
Three new members have been appointed to the Advisory Committee on Residues and Other Toxic Chemicals. Professor J. Knowlton, professor of community medicine, University of Sheffield; Dr E. B. Gareth Jones, reader in histology, Portsmouth Polytechnic; Dr R. L. McCallum, reader in the Nuffield Department of Industrial Health, University of Newcastle upon Tyne.

Further information from both Caves, Centre of Transport Studies, Cranfield Institute of Technology, Cranfield, Bedford MK43 0AL.

The second Dylan Thomas summer school organized by the department of extra-mural studies of the University College of Swansea, will be held at the college from July 19 to 25. It will discuss the early poetry such as *Eighteen Poems* and *Twenty-five Poems*. Fee: £35. Further information from the director, Department of extra-mural studies, Berwick House, Uplands Terrace, Swansea SA2 0GL.

DES grants distribution to national voluntary organizations, to see whether a basis could be found for the more equitable and efficient distribution of funds.

**The University in Less Developed Countries** by Professor W. Arthur Lewis, Madison Professor of Political Economy, is published by the International Council for Educational Development, Occasional Paper No. 11, available from the council at 680 Fifth Avenue, New York, N.Y. 10022, a paper presented at the annual conference of Indian Universities in Nigeria, which considered and assessed the special problems of the university in a less developed country.

**Teaching Geography**, a new journal for teachers (published for the Geographical Association by the Journals Division of the Association), will be published in 1975. It will contain 5 issues £2.00, single copies £1.00 aims to discuss the new ideas and approaches in geography as well as the issues of how to achieve comprehensive education within the reorganized schools.

## Forthcoming events

**"Numeracy, Statistics and Computing in the Social Sciences"** a two-day conference, will be held at the University of Dundee from September 8-9, 1975. Registration forms and further details from Dr L. P. Mendel, Department of mathematics, The University, Dundee DD1 4HN. Registration to be completed by 30 June.

A one-day seminar on the workings of the European Convention on Human Rights is to be held on July 6 at the School of Law of Central London Polytechnic. The seminar will cover the purpose and status of the Convention and the substance of the rights and freedoms guaranteed. Fee: £10. Further details from Neta Swallow, The Short Course Unit, Polytechnic of Central London, 35 Marylebone Road, London NW1.

A one-day seminar on The Prevention of Terrorism Act and other emergency legislation relating to Northern Ireland, has been organized by the School of Law of the Polytechnic of Central London on June 27. Fee: £4.00. Further details from Neta Swallow, The Short Course Unit, Polytechnic of Central London, 35 Marylebone Road, London NW1.

The annual conference of the Society of Architectural Historians of Great Britain is to take place from 4-7 September at the University of Kent, Canterbury. The theme of the conference is "Medieval and Modern Architecture in East Kent". Details are available from the hon. secretary, Mrs Victoria Symes, 8 Belmont Avenue, Melton Park, Newcastle upon Tyne, NE3 5QB.

The third conference on leisure, sport and culture for disabled youth will be held in Maastricht, Iran, from September 9-18. The theme of the conference will be "Europe meets Asia" and will take the form of an adventure camp. Detailed information: Alan Drury, press officer, The Centre Bureau for Educational Visits and Changes, 43 Dorset Street, London, W1H 3FN.

The 12th World Congress of the International Cardiac Society will be held in the University of Edinburgh from September 17-20. The Congress is held in conjunction with the International Surgical Society which will meet from September 14-17.

The annual meeting of the British Association of Applied Linguists is to be held on September 15-17, at the University of York. Papers for discussion include the Bulletin report for 1974, the Bulletin report for 1975, the Bulletin report for 1976, the Bulletin report for 1977, the Bulletin report for 1978, the Bulletin report for 1979, the Bulletin report for 1980, the Bulletin report for 1981, the Bulletin report for 1982, the Bulletin report for 1983, the Bulletin report for 1984, the Bulletin report for 1985, the Bulletin report for 1986, the Bulletin report for 1987, the Bulletin report for 1988, the Bulletin report for 1989, the Bulletin report for 1990, the Bulletin report for 1991, the Bulletin report for 1992, the Bulletin report for 1993, the Bulletin report for 1994, the Bulletin report for 1995, the Bulletin report for 1996, the Bulletin report for 1997, the Bulletin report for 1998, the Bulletin report for 1999, the Bulletin report for 2000, the Bulletin report for 2001, the Bulletin report for 2002, the Bulletin report for 2003, the Bulletin report for 2004, the Bulletin report for 2005, the 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Frances Hill reports from the annual meeting of the American Association of University Professors in Washington

## 'Higher fees necessary to stop pay slide'

Higher tuition fees at public universities, as well as a substantial increase in public funding of universities and colleges, might be needed to halt the erosion of academic salaries, Mr. Donald Coll, vice-chairman of the American Association of University Professors' Committee 2, on the economic status of the profession, told the AAUP's annual meeting in Washington.

Mr. Coll's statement challenged official AAUP policy on the financing of higher education. Last autumn the association's council voted to adopt a policy favouring low tuition fees at public universities, and in recent testimony to a Congressional committee the association argued that federal and state aid for students in the private sector should be reduced.

The real compensation of faculty members might have decreased more than it had during the past two years if public tuition fees had not increased, Mr. Coll argued. Student charges at public institutions increased by about 21 per cent, "which sounds like a lot until you discover that per capita personal income increased by 20 per cent". For the AAUP to urge the states to freeze tuition fees was inadvertently to ask public facilities to subsidize their students, Mr. Coll said.

He criticized the association's argument that grants and loans to students at private universities should be reduced, saying that "substantial increases in the direct financing of public institutions to limit tuition fees increases should be counterbalanced by increases in our reductions—in both grants and loans to private institution students".

The changes in policy proposed by the AAUP would "produce great adversity for that minority of

the AAUP membership that teaches at non-prestigious private institutions".

Mr. Coll's statement makes clear that by no means all AAUP members, even among those on the association's committees, agree with the association's official policy on financing higher education.

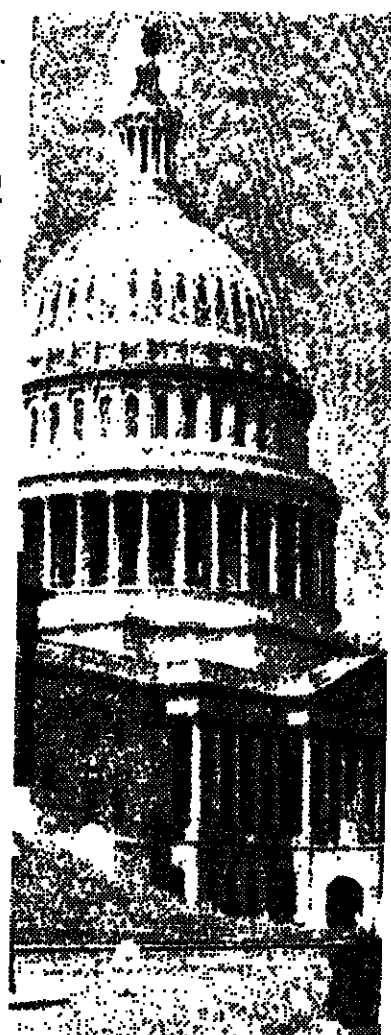
A session on tuition fees at last year's annual meeting several members of Committee 2, for example, favoured an increase in tuition fees at public universities. They argued that such an increase would generate a greater flow of funds into higher education than could be expected from a policy of low tuition fees supplemented by increased federal and state grants to universities.

The council's vote last autumn in favour of a low tuition fees policy followed the publication of a paper by Dr. Joseph Duffy, general secretary of the AAUP.

Dr. Duffy defended the low tuition fees policy on the grounds that higher education should be regarded as of benefit to society as well as to individuals and should therefore be funded, to a large extent, by society.

He said that the association should take a long-term view of the issue, hoping to influence the federal government to commit a larger proportion of its resources to education.

Mr. Henry Yost, chairman of Committee R, on relationships of higher education to federal and state governments, told the conference that the association's policy on the financing of higher education was "flexible". Although the association was in favour of low public tuition fees, he said, it believed that other ways had to be found of raising sufficient money for faculty salaries.



Capitol Hill: where the lobbying begins.

## AAUP goes for Congress connexion

Delegates spent a day before the opening of the conference on Capitol Hill meeting Congressmen. The AAUP believes this to be the beginning of a closer association with Congress. The 200 delegates who met Congressmen will constitute a national network in the forthcoming months which will be mobilized "when necessary and appropriate", according to Dr. Joseph Duffy, general secretary of the AAUP.

The result might well be for the first time a clear and consistent expression of higher education concerns to members of Congress, Dr. Duffy said. Mr. Henry Yost, chairman of the AAUP's Committee R, on relationships of higher education to federal and state governments, said that Congressmen encouraged delegates to believe that they should exert on a major programme of lobbying.

Higher education associations have traditionally put little pressure on the federal government, either in policy or finance matters, largely because Washington plays a small role in these areas compared with the states. The AAUP's move to lobby the federal government reflects growing concern over the undermining, because of the recession, of the universities' traditional non-governmental sources of income.

## Moves to open Rhodes to women

Ms. Mary Gray, chairman of Committee W, on the status of women in the academic profession, said that the relative position of women has deteriorated during the past four years despite application of affirmative action principles and obligations.

Rhodes scholarships available to women should be taken to make Rhodes scholarships available to women, she said. Anti-discrimination laws at present exclude Rhodes scholarships from their provisions. Committee W had contacted the British Government regarding the possibility of British parliamentary action to alter the operation of the programme.

## Science PhDs warned of bleak outlook

Employment prospects for scientists with PhDs are likely to be restricted in the future, said Mr. Philip Handler, president of the National Academy of Sciences. In his annual report to the Academy, with federal appropriations for research and development approximately levelled off, with business in recession and with the opportunities for academic positions constricting there was almost bound to be a surplus of science PhDs over the jobs available, he said.

Mr. Handler suggested that scientists should be given a "broadened education" so that those who cannot find work in scientific research might be able to get other jobs.

Another effect of the cutback in federal funds for scientific research was the "continuing pressure" to use available federal resources for projects promising early practical usefulness, he argued.

Government research departments, such as the Defence Department, the National Institution of Health

and NASA, were putting emphasis on specific applied programmes, direct support of individual graduate students and postgraduate fellowships had been markedly reduced.

A "powerful threat" had appeared to the "peer review system" in decision making in the selection of research projects for support. Some commentators, members of Congress had inveighed against federal funding of research projects "with seemingly no titles, usually in the life or social sciences, without examination of potential significance". The "set of distrust in the judgement-making apparatus of science-supporting agencies is being firmly planted", Mr. Handler attacked an amendment recently passed by Congress which called on National Science Foundation to transmit a message to Congress every 30 days stating the manner in which the national interest was being fostered by the approval of specific grants for research programmes.

## California probe reveals major bias against Chicanos

from Don Speich

LOS ANGELES Chicanos are under-represented at all levels of the University of California, according to a report from a special UC task force.

The task force, comprising university administrators, faculty members and students, was appointed in 1971 by UC President Charles Hitch.

Its report was released at a recent meeting of the university's Board of Regents.

To remedy the situation, the report recommends a series of steps including the creation of a permanent special commission to advise the UC President "on matters affecting Chicanos". There is no such commission for any other minority group in the university.

A five-year programme of undergraduate scholarships and graduate fellowships for Chicano students admitted to the university is also called for in the report.

The high cost of attending the university is probably the greatest barrier to increasing the enrolment

of Chicano students, next to its admissions policy", it says.

A commission should be created to devise ways of identifying and admitting "bilingual/bicultural" students, and the capacity to complete university studies but not meet the regular admission requirements.

At faculty level, the report calls for an aggressive Affirmative Action Programme backed by the commitment and the money of the university, implying that this has not been done in the past.

The report notes that more than 3,000 Chicano students are enrolled at UC campuses today, compared with between 100 and 200 a decade ago.

It says, however, that while more than 17 out of every 100 Californians are Chicano, only three out of every 100 students are Chicanos.

Mr. Hitch is to review the document and report back to the Regents.

## Guidelines hit 'male' sports

The Department of Health, Education and Welfare has announced a new set of regulations outlawing discrimination in education which will take effect from next month.

Among the many provisions, the most controversial relate to inter-collegiate athletics. Under the new rules, colleges must create women's teams in any sport where men's teams exist, provided there are enough women interested.

The rules must provide teams of each sex with equal facilities, travel allowance and coaching quality. If a college offers five scholarships for every 100 male athletes, it must offer scholarships to 5 per cent of the women who participate in sports as well.

Spokesmen for the National Collegiate Athletic Association predict disaster for college sports if the rules are enforced, and they have vowed to fight them to the last Congressional hearing.

They especially want to exempt football and basketball, which have traditionally produced revenues to support both themselves and other sports.

## Patricia Nixon college blues

Finch College, a private women's college in Manhattan, which boasts Patricia Nixon Cox as one of its alumnae, is to close for the next academic year and possibly for longer.

Pending a final decision on state financial aid from the state, the school is attempting to arrange refinancing through several private savings

## Boston sets union first

Members of the Boston University faculty have voted to unionize by 394 to 262. If this vote stands after the expected challenge from the administration, Boston will become the first major private university in the country with a unionized faculty.

The administration claims that the vote was held after classes were over, and wants elections rescheduled for the autumn.

The issues in the voting were faculty salaries, the amount of faculty participation in decision making and the leadership of President John Silber. Although Mr. Silber has helped lead out of its financial difficulties since becoming president in 1971 and has enhanced the university's national reputation, some faculty members consider his methods too autocratic.

The City of New York has been unable to pay the 13,000 faculty members of City University of New York at the usual time due to New York's desperate financial situation. Monthly pay cheques for June are normally sent out early in July, when the colleges begin their summer recess, to help employees with holiday expenses. But the city is now having to postpone the month's salary payments until June 30.

## New York dons wait for wages

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Mike Duckenfield reports from the Stockholm conference of the European Ministers of Education

## Ministers spotlight recurrent education

European Education Ministers meeting here last week agreed a seven-point resolution laying down policy guidelines on recurrent education. The resolution emphasized that work experience should be more widely taken into account as a basis of qualification for admission to higher education and that individuals should have the right to resume education later in life.

The ministers were representing the 21 countries which participate in the Council of Europe's programme on educational and cultural cooperation. The countries include the nine EEC members, all the Nordic countries and EFTA as well as Cyprus, Malta, Turkey, Spain, Greece and the Vatican.

The resolution also said that individuals should have the opportunity for paid educational leave and that education of the 16 to 19 group should prepare students for both further studies and employment.

It agreed that educational provision should be organized in such a way as to balance the financing of youth and adult education and to coordinate it with social welfare and employment policies. Post-compulsory education should suit the needs of all individuals and not just the relatively academic.

The need for policies of positive discrimination to aid the disadvantaged was essential if existing inequalities were to be tackled and the "active encouragement" in their "active encouragement" in their extended programmes of post-compulsory education and training so that qualifications could be obtained in different ways and at different times through recurrent periods of study.

It said, however, that while more than 17 out of every 100 Californians are Chicano, only three out of every 100 students are Chicanos.

Mr. Hitch is to review the document and report back to the Regents.

## Action call for more mobility

The ministers were accused of dragging their feet over the implementation of common resolutions by Mr. Georg Kahn-Ackerman, secretary-general of the Council of Europe.

Referring to the resolution agreed four years ago at the ministers' meeting in Brussels to facilitate greater mobility for teachers and students, he said there had been too much talk and not enough action.

"The mobility question is unfortunately typical of the lack of impact of international recommendations on national action."

"A great deal of excellent technical work has been accomplished, some admirable studies published and several recommendations adopted. However, when one measures all this against the practical results achieved the question inevitably arises: is it really worth while?" he said.

Although a special mobility project, in which 13 countries were participating, was beginning to remove some obstacles to the free movement of postgraduates, progress, compared with that



The Riksdag, Stockholm.

Other "useful forms of action" envisaged by the ministers were the introduction of policies to reach the socially and educationally disadvantaged and the distribution of educational facilities to outlying communities.

Recurrent education was the theme of the meeting, the ninth in a biennial series organized by the Council of Europe. Lasting three days, it also discussed migrant education and priority areas for European cooperation and attracted a record 150 delegates from the 21 participating countries, seven observers and guest countries and five international organizations, including Unesco and the Organization for Economic Cooperation and Development.

The 12-man British delegation was initially led by Mr. Reg Prentice, prior to his recall to London because of the Cabinet reshuffle. Professor Maurice Peston, the special adviser to the Secretary of State, was also present.

Other ministers and experts present included Mr. Richard Burke (Ireland), Mr. René Haby (France), Mr. Antoine Humblot (Belgium), Mrs. Ritt Bjerregaard (Denmark), Dr. J. A. van Kemnade (Netherlands), Mr. Bertil Zachrisson (the Swedish

Minister, who chaired the meeting), Professor Joist Grolle (President of the Standing Conference of German Education Ministers), Mr. Guido Brunner (EEC Commissioner for Education and Science) and Mr. Georg Kahn-Ackerman (secretary-general of the Council of Europe).

On migrant education the ministers agreed, following discussion on the conclusions of their ad hoc meeting on the subject in Strasbourg last November, that immigrant and migrant children should have the same educational opportunities as those of the host country. While they should be given the opportunity to assimilate the language and culture of their new country they should also be encouraged to retain or learn about that of their country of origin.

Migrant children should have special preparatory classes, educational certificates should be mutually accepted and special efforts should be made to involve parents in the activities of schools.

Three priority areas for future European cooperation were agreed. They were pre-school and primary education, the school in its relation with the community and lower secondary education.

The British government's first priority in future post-school spending was to extend provision for 16 to 19-year-olds, especially those not continuing with full-time learning or going into skilled jobs, delegates were told in a speech which was to have been delivered by Mr. Reg Prentice, the former Education Minister, but which was read out by Miss Wilma Harre, under secretary of the DES, following Mr. Prentice's recall to London.

"In comparison with several other countries the proportion of young employees in Britain who take part in continued part-time education is far too low. The latest figure of only just over 20 per cent shows no real progress over the situation of 10 years ago", he said.

One solution was the creation of a single comprehensive project of "vocational preparation" bringing together existing provision at present distributed between the Department of Education and the Department of Employment, he said.

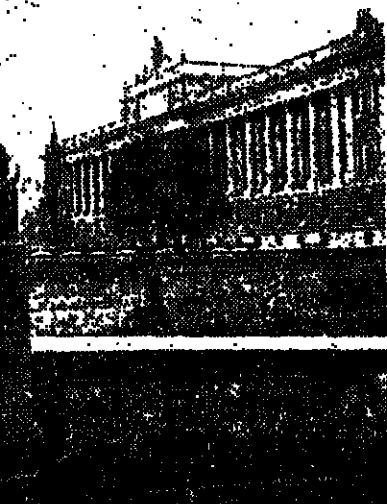
He said he would be proposing new ways to achieve this when he presents his report on the Stockholm meeting to the European assembly in Strasbourg.

## Moscow plays host to IAU meeting

More than 800 delegates and observers are expected to attend the quinquennial conference of the International Association of Universities being held in Moscow in August.

This will be the largest conference so far of the IAU, which was founded at the end of 1950 and now has a membership of over 600 institutions in 100 countries.

Themes of the conference is "Higher Education at the Approach of the 21st Century". Also under discussion will be the allied subject of "Education in Higher Education".



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## Academics 'keep to themselves'

A serious breakdown in scholarly communications in Canada is one of the more disturbing findings of the Commission on Canadian Studies, according to Professor Tom Symons, chairman of the commission.

The problem is compounded by Canada's size and its regional and linguistic differences, but the commission was surprised to discover some universities where members of the same department did not even know research themes under

## New Ministry aims to boost research

from Patricia Clough

ROME: Prospects of a brighter future for Italian research have emerged with the Cabinet approval of a plan to create a full-scale Ministry for Scientific Research.

The government has promised for years in Parliament and academic circles to take action over research, a field in which Italy lags badly behind other Western countries. It is noticeable, for example, that Italian Nobel prizewinners are extremely rare. Internally it is of undisputed disadvantage to the economy, industry and social development and makes Italy dependent scientifically on other countries.

Leading economists have warned that Italy can only overcome its present grave economic crisis if it learns to stand on its own feet technologically.

The Italian state spends only 450,000 lire (£300m) a year on scientific research, around 1 per cent of its total budget—a fraction of the percentage allotted by other developed countries. Another 350,000 lire is spent by industry, with the universities spending only about 10,000 lire, although some are able to get help from the National Research Council.

Until now the main responsibility, such as it is, for research, has lain with a Minister without Portfolio for the Coordination of Scientific Research, assisted by a staff of about 80 but with virtually no authority or legal powers. He supervises Italian space research but has no official control, for instance, over the main Italian research body, the National Research Council.

The first task of the new Ministry, when it comes into being, will be to coordinate and streamline the work of the numerous research bodies, universities and ministries which are now frequently conducting the same type of research independently of each other with great wastage of funds, effort and resources.

The ministry's activities will at first be concentrated primarily in the field of applied research, leaving pure research to the universities.

The plan for the new Ministry is expected to have an easy passage in Parliament and may well be approved by the autumn.

Meanwhile, the research situation in the universities is about to improve with reorganization along departmental lines to pool facilities and the creation of doctorates of research—equivalent of a PhD—which hitherto have not existed in Italy.

The council will also advise on the creation of new faculties and the expansion of existing ones, the establishment of degree and other courses, and on the way in which all these matters can be coordinated.

It will have extensive powers to investigate and advise on university education questions at large, whether on the direction of the minister or on its own initiative. The council will be able to appoint committees to help it in its work, not only from its own membership but also from outside, provided that the chairman is a member of technical education, and four for

their knowledge and experience of the financial, economic and other aspects of university education.

As one of its foremost tasks, the council will have to advise the minister on the granting of subsidies to universities for capital and recurrent expenditure—a matter which bulked large in the De Vries report.

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## South Africa University super-body set up after government inquiry

JOHANNESBURG: New machinery for the direction of university education in South Africa and for the control of the White universities is planned by the government in the wake of the De Vries Commission's report (THES, March 7). A Universities Advisory Council is to be established to assist the government in the guidance and control of university education.

The council will consist of a chairman and eight members, all of them appointed by the Minister of Education. The chairman will be a government nominee and of the eight members, two will be representatives of the Committee of University Principals, one will represent the Department of National Education, one will be chosen for his knowledge of the work of the colleges for advanced technical education, and four for

## Slavists form all-Ireland group

Slavists from the New University of Ulster, Coleraine; Queen's University, Belfast; Trinity College, Dublin; University College, Dublin; and the National Institute for Higher Education, Limerick, have decided to set up an Irish Association of Slavists to promote in-

Slavonic languages, literature and history. The setting up of the new body comes at a time when the Irish and Soviet governments are about to open negotiations on an agreement on "scientific, cultural, and scientific co-operation" and the Department of Education in Dublin is planning to introduce Rus-

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Peter Campbell on the training of foreign postgraduates

## Overseas postgraduates must first prove themselves as undergraduates

Very often when our politicians return from overseas they announce a cultural agreement which includes an arrangement for the training in the UK of postgraduate students.

This does, however, provide a challenge and a consequence could be serious if we should fail. If we send students back to their country without the qualification which provided the incentive to come to the UK then we must have near watertight reasons for doing so. Otherwise we may well have created an Anglophobe who may subsequently damage our reputation. I would like to explain, therefore, some of the problems of assimilating overseas postgraduate students into our departments and some of the ways in which we may be more likely to succeed. I will confine my remarks to students who are aiming at a PhD by research.

In an ideal world the student who leaves our universities with a PhD should not only have done a significant piece of research which has been properly presented in a thesis but should also be sufficiently well-versed in the broad area of his chosen subject that he can usefully participate as a teacher in his home university. Failure in the latter respect is the most likely aspect of his training to be criticized, for the university teachers overseas are likely to be eager to make good use of their new found colleague.

It is often argued that since PhD programmes in Britain contain no substantial element of course work the student obtains a training in a narrow specialty and is only fit therefore to take his place as a research worker in a team which is studying a similar aspect of his subject. In contrast, it is said, the PhD student in the USA not only does research but also attends many courses for which he is awarded grades in short, it is often thought that the training in the USA is better suited for overseas students with a heterogeneous background than that in the UK.

The PhD programme in the United Kingdom is designed for talented students who have a solid understanding of their subject from their studies for their first degree. During their research work for their PhD they will also be involved in some teaching and will attend seminars on various subjects. There has recently been a tendency to insist that all PhD students register first for an MPhil, which is normally awarded on a thesis presented after two years of research but satisfactory students can be transferred to complete their thesis in the usual three-year period. It is my experience that there is no real prospect of modifying our PhD programmes in spite of the suggestions of various committees; that a PhD student should be compelled to attend various courses.

Overseas students are usually treated in the same way as our own students in that they must also register first for an MPhil. Many supervisors have also found that it is often wiser to insist that the overseas student should be in the department for six months before registration even for an MPhil so that such students can first prove themselves to be suited for postgraduate research work.

These requirements often cause trouble with overseas governments who may even try to insist that the student be registered at once for a PhD. My guiding principle is that a student should be embarked on a course in which he has a reasonable chance of success. I, therefore, explain to the sponsoring government that it is very often necessary for a student to spend a preliminary period in order that I may make a proper assessment of the student. I find that this viewpoint is usually understood both by governments and by parents in the case of privately financed students. The preliminary six months period also provides the opportunity for the student to improve his knowledge of English and to learn our ways.

But what of the student, who after six months is not ready to start research work; what is to be done for him? One may be in a difficult position in that the student has probably not failed any formal examination. It may even be that there are personality problems between student and supervisor. One can try to prevent such a situation by first seeking the opinion of the British Council representative in the student's own country concerning the student's knowledge of English and the standing of his first degree. The tutor is very difficult to assess unless one has either first-hand information or a personal opinion of the staff of the university concerned. Too often the science subject one also has the problem of assessing the standard of the practical work. The student may be intelligent but not have handled modern equipment and understanding of the nature of an experiment. A further problem is that the student may have been subjected to a narrow and rigid form of teaching so that he may not understand that a rigorous discussion is a necessary preliminary to the planning and interpretation of experiments. Too often the overseas student adopts a subservient posture towards his supervisor.

I believe that many overseas students are slipping up on our postgraduate courses and that they tend to show up the weak points in our postgraduate programmes. These students are only truly effective when the student is really bright and has a sound basis of knowledge and experience from his first degree. Some may say that we can do little about the problems raised and that the best students will surmount the hurdles and survive. This is surely true, for the future university teacher must learn to teach himself. For the student of only moderate ability there are, however, temptations to lower the standard of the PhD.

I would like to emphasize that this is a very wrong approach, for this is not only a serious injustice to your own university but to all British universities and it is also very unfair to the person or government who sponsored the student. The news gets around overseas very quickly and the day that it is generally agreed that your degrees are worthless is indeed a sad one. Let me emphasize again that the departments of a university and the universities of a country sink or swim together in this respect and it is hard for those who are striving to maintain standards to be dragged down by those who too easily give in.

In order to avoid many of the difficulties described above I would like to propose that the great majority of overseas students should not be admitted to postgraduate studies until they have proved themselves in our undergraduate degrees. A student with a first degree in an appropriate subject could probably be given a remission of one year on a three-year course so that he could complete the course in less than two calendar years and would have been awarded a graded honours degree.

Provided the grade was II(ii) or above such a student could then register for a MPhil. I must confess this system to the setting up of MSc courses lasting for one to two years which are based on undergraduate lectures. In this case one has to explain why some students should be awarded a higher degree and some a first degree for basically the same course of lectures. This is harmful for the reputation of the MSc. Also there is the problem that the students for such courses are likely to be largely from overseas. Surely overseas students should be mixing with British students and should not merely meet one another. How are standards fixed under such circumstances? One snag of my proposal is that a student would need about five years to complete a PhD from his date of entry to this country and this is a long time to be away from home. In most cases it would probably be best if the student returned to his own country for at least a year after completion of his first degree and then returned for his postgraduate studies. During his period at home he should be useful as a junior teacher providing valuable experience both for himself and his own university.

I have just returned from an intensive tour of Iran. Many university teachers there are unhappy about our present procedures for postgraduate education and would be much happier with the ideas outlined above. Their implementation, however, need the backing of those concerned with such matters in this country—the British Council, the Inter-University Council, the Ministry of Overseas Development. If they could bear these matters in mind when negotiating cultural agreements with overseas governments then I believe we could all proceed on a firmer basis and a better chance of success.

The author is professor of biochemistry at Leeds University.

## Towards a better definition of higher education

When the Education Act of 1944 was under discussion the essential theme was secondary education for all children. At that time further education was relatively undeveloped, and the universities represented the essential structure of higher education. There were a few technical colleges that covered work which might be regarded as reasonably advanced, and the training colleges, which offered a two-year course for teachers, were not regarded as in the pattern of higher education.

Since that time there has been virtually an explosion in the fields of both further and higher education, though indeed all education beyond the school stage is further education so far as the Education Act is concerned. Recently there have been frequent references to higher education as distinct from further education, though nobody seems to have thought it necessary to define higher education. In fact, however, such a definition is emerging.

The embodiment of colleges of education, now offering three and four-year courses, into the structure of higher education is made manifest by the mergers which are taking place, though here the Department of Education and Science seem to have become confused, or perhaps over-concerned to ensure that the new places are filled. Their proposals that colleges can offer courses virtually for young people in the 16 to 18 age group are surely a complete muddling of structure. If the colleges of education are to be part of the higher education structure then, clearly, they must be concerned with courses beyond the age of 18, with appropriate entry standards and reaching to degree level.

This raises the interesting question of the proposed merger of the Association of Teachers in Colleges and Departments of Education and the Association of Teachers in Technical Institutions. The latter body covers the whole field of further education and reaches into higher education in the nature of its membership. There are those whom I am one, who feel that the stage is being reached in this part of the service which was reached in 1944 in relation to the schools, when quite properly there was a clear recognition of a distinction between primary and secondary education.

Similarly, for the other side of the coin, their needs could be more appropriately met than at present, where substantial differences in conditions of service exist. It could well be one of the further education, higher education, and adult education. I present arguments as to whether not polytechnics and universities should be deemed to be part of higher education, or whether they should solve the problem of entry to a new level of higher education, with a structure which applies in higher education institutions, with conditions of service appropriate to that work.

It seems to me that we are coming to a point where further education requires definition as distinct from higher education. The universities, the polytechnics, the colleges of education and certain specialist colleges are clearly concerned with a sector of the work which starts at 18 or beyond, has defined standards of admission to the courses and leads to a graduate level.

There is a wide field of further education which does not satisfy that definition: the whole structure of craft courses and courses for technicians, and, of course, adult education. There is also the increasing complexity of the 16-18 plus sector with large numbers in this age group coming under further education regulations and large numbers under school regulations.

I am, therefore, tempted to suggest that school regulations should be restricted to pupils up to the age of 16, and that we should establish a new definition of further education, dealing with the 16-18 plus problem and providing regulations to cover these young people, whether they are in the upper reaches of a school or in college. I am bound to admit, however, that the development of comprehensive schools of limited size would seem to make inevitable what I have called tertiary colleges, but that may be quite a way ahead.

Meanwhile, wherever these young people are, they should be under one set of regulations, in my opinion. Higher education could then be defined quite clearly as post-18 with standards of entry of about 18. The picture would be completed by a new definition of adult education, which would cover the whole range of colleges offering courses beyond the age of 14, whether of a vocational or

It will be argued that some of these colleges do in fact include limited amount of advanced work which would satisfy the definition of higher education now being suggested. In fact, the proportion advanced work undertaken in colleges is in general relatively limited. Whether it will more or less increase in the future, whether indeed some of the colleges should move into the higher education sphere, will emerge in the years to come. What is obvious, surely, is that the present definitions, established in the requirements for examination and the inevitable further education in higher education must be defined with very much greater clarity than obtains at present.

In turn, it seems to me that the entire Burnham machinery should be reconstituted. There are many reasons for this, but there is any real doubt that merely merging the Pelham Committee with the present Burnham Further Education Committee, which seeks to cover standards of work ranging from below O level to postgraduate, would not be very satisfactory. I venture, therefore, to suggest new definitions: for schools, which would be appropriate regulations and cover all work up to the leaving age. Second, further education, with regulations covering 16 to 18-plus work, whether academic, technical, full-time or part-time. Third, higher education, comprising essentially work beyond defined standards of entry, but offering courses reaching graduate level. Fourth, adult education, virtually covering all age of education not dealt with by the three categories listed above.

It would follow from this that new salary negotiating structures would be needed which would cover a wide range of conditions of service as well as staff. It could well be one of the further education, higher education, and adult education. I present arguments as to whether not polytechnics and universities should be deemed to be part of higher education, or whether they should solve the problem of entry to a new level of higher education, with a structure which applies in higher education institutions, with conditions of service appropriate to that work.

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Alexander of Potters

Lord Alexander is General Secretary of the Association of Education

We were charged initially with preparing a foundation course in "Literature and Culture". I had divided the field into literature, history, philosophy and religion, and the fine arts. What I did was to draft an introduction to the study of man in his cultural achievement as a basis for discussion.

I like the broad generalization as a framework within which to fit the particular. I would rather operate within a fairly generalization (and all generalizations are faulty, including this one) than within none at all. Others prefer to start from minute particulars, without which (says Blake) art and science cannot exist, and only reluctantly and cautiously move to generalization. A normal university would find place for us both independently: we might meet to disagree at some staff seminar—but we might agree. But in the Open University we had to agree before we could make any progress at all.

The pattern which eventually emerged for the Arts foundation course was as under:

1. Humanities and the Study of Civilization.
2. The Yorubas of Nigeria.
3. Technology, Society, Religion and the Arts: some questions.
4. The Artist and Society.
5. Disciplines and their Methods.
6. Introduction to History.
7. Introduction to Literature.
8. Introduction to Art.
9. Introduction to Music.
10. Form and Meaning.

Case Studies:  
17-18 What is Socrates?  
19-20 What is a Gospel?  
21-22 The Lives of the Most Eminent Painters, Sculptors and Architects, written by Giorgio Vasari, painter and architect of the 16th century.  
23-24 Handel: a Renaissance tragedy.  
25-26 Descartes: the father of modern philosophy.

27-28 March 2, 1829: Mendelssohn revises Bach's St Matthew Passion.  
Industrialization and Culture  
29-30 Industrialization and Culture in Britain—an extended case study.

Logic  
1.1 Introduction to Logic  
"Disciplines and their Method" was a simple concession to the protagonists of single disciplines, but it was in fact given at this stage to begin to sharpen particular tools. The historians, by some hard bargaining, managed to secure four weeks at this stage. These four weeks form a highly original and controversial approach to the study of history, starting not from historical data, but from the principles of historiography.

This section ended with two weeks which we called "Form and Method". This was intended to bring together the separate work in literature, art and music covered in the six previous weeks. We might, for example, ask: "Supposing you want to convey an experience concerning a tree, or concerning death, in words, paint and music, how far are the forms you use similar, how far different and in what way are the differences dictated by the medium itself?" Or again: "We often speak of the harmony of a painting or the colour of a piece of music. Are these just metaphors, or is there a real relationship? We apply 'ring-form' to both literature and music: is there a real parallel? And is there any parallel in the visual arts? In actual fact the experts in the three fields treated this as a chance to expand on what they had written earlier, and there was no meeting of minds. I "topped and tailed" the units in an attempt to bring them together, but they were not a success.

The third block was the most misunderstood: some reviews have even treated it as if it were intended to be a Cook's tour of Western civilization. In the course of our discussions a number of areas for detailed study had been proposed. We decided in the end to keep some of them in as case studies. They were meticulously chosen after long debate. Some of the reasons for selection were personal: it seemed foolish not to draw on my special interest in the classics or Catherine King's in the Renaissance or Brian Stones' in Shakespeare. Another argument was to include aspects of culture, particularly religion and philosophy, which had not so far been included: this was also a reason for including something from the Graeco-Roman world. All were intended to draw on what had gone before, and to bring together interests from more than one disciplinary area.

To the one example, the units "Which was Socrates?", which have been criticized by professional philosophers because they do not treat the problems which interest them, were in fact deliberately conceived as an exercise in source-criticism affecting the evaluation and understanding of a very third-century BC activity; they were not being touched on, because there had as yet been no introduction to philosophy.

We carefully contrived that three of our case studies fell within the Renaissance period, preceded by the two main strands of Renaissance thought in classical and Christian culture, and followed by a bridge between

## Opening the Open University

Professor John Ferguson,  
Dean and Director  
of Studies in Arts,  
recalls the early days of  
planning OU courses



"Mendelssohn Rediscovery of Bach" was in fact the most successful piece of integrated study in the course, relating as it does music to history, and the television sequence in which Gerald Hendrie demonstrates the inappropriateness of playing Chopin on a harpsichord, and the equal inappropriateness of playing Handel on a Victorian organ, is a brilliantly concise exposition of the relationship between the two.

Fourthly, a number of lines of thought were converging on Britain in the middle of the nineteenth century. We decided to treat this more expansively, as a kind of extended case-study, under the general heading of "Industrialization and Culture". We brought together for this the historians, especially a brilliant young Scot, Christopher Harvie, with a passionate attachment to railways and canals; the art historians (the programme on "Cast-iron" was one of the best, showing the interaction of technology and art); the philosophers, to discuss the effect of mechanization on thought; and the literary critics, since this seemed the best part of the course to introduce a novel—they chose, slightly oddly, D. H. Lawrence's *The Rainbow* rather than Dickens' *Hard Times* or an Arnold Bennett, but in fact it provided a valuable bridge between the Industrialized society of Queen Victoria's day and our own time.

The approach to the Science foundation course was entirely characteristic of Mike Peutz. The entire course-team got together and spent two months in thrashing out these new ideas till they reached agreement. But the trauma of interaction was not yet over. To make one example only: the biologists and the physics scientists had their own different usages of the word "force". But in this course biology and the physical sciences were integral parts of a single whole. It really was impossible that students should be confronted with the same word used with different connotations in the same course. The biologists had therefore to get together from the first and agree upon definitions—and this was something which in other universities they had never been forced to do. They had to keep an eye on one another, too, to ensure consistency.

Science made more use of the course-team, where Arts broke up into working-groups. In fact the science described in the main aims of their course—which was proudly and sufficiently designated "Science: A Foundation Course"—as "to present and explain some of the concepts and principles of importance in modern science and to show how science, technology and society are interrelated", and claimed to show how the disciplines of physics, chemistry, biology and geology are related to and dependent upon each other, and to show what is common in method, technique and philosophy, and what is specific to each."

The course starts from the "primitive" exploratory activities of simple organisms and traces the emergence of science from its earliest beginnings. This leads to the use of tools and measurement, and so (surprisingly early) to the special theory of relativity. Then in turn to force, mass and energy, and the atomic structure of matter. The course follows the line of increasing complexity through chemical bonding and molecular structure into the living organism, the cell, the multicellular organism, and the role of DNA and the general theory of evolution. This in turn leads to a study of the environment, to geology and the study of the Earth as "a continually changing dynamic body".

The second-level courses in science are difficult for anyone to grasp who has not been through the travail of gestation. The basic structure is multidisciplinary rather than interdisciplinary.

But it will be noticed, too, that developments in science envisage much more interdisciplinary work at advanced levels than in some other faculties, and that this is an important aspect of the faculty's planning. The faculty have something of a mission: they hope to assuage the anarchy of scientific specialization, which makes the training of new scientific graduates a haphazard and irrelevant, and to restore honour to the generalist in science who will have had a first-class scientific education directed to a different end, to helping him to be a scientist in his contribution as a journalist or manager or civil servant or policeman or simply a citizen.

When course labels were first being suggested, Science's and Mathematics' M

Social Science became D, after Drake, the Dean at the time. D100 (the Social Science foundation course) was called "Understanding Society". The account of the course provided by the course-team is good that it would be impossible to better it:

All of us understand society—to some extent. We must if we are to survive in it. But our understanding is partial, often superficial and coloured by personal experience. This course is for those who want to understand society better by approaching it systematically. We shall consider five different views of man—the economic, sociological, psychological, political and geographic—in order to highlight these various facets of his life in society.

The course is divided into three parts in which we ask three fundamental questions: why people live in societies; how people live in societies and what kind of problems they face.

In the first we ask—what does man gain from being under government? What are the economic advantages man secures through living in society? What biological, emotional and social needs does he seek to satisfy?

The second and major section of the course is focused on how man lives in societies. This is not simply a descriptive account of the various social, economic and political systems which man has developed or of the environments in which he has developed them. It also attempts to analyse and explain, within limits, predict man's behaviour, drawing upon appropriate scientific methods and skills. Each discipline thus presents a range of insights, many examples will be drawn from societies contrasted in complexity.

In the final section of the course we take, by way of example, one of the problems that face the world today: the so-called "population explosion". This is a multifaceted problem in the study of which all the social sciences have a contribution to make. The summer school, through a series of field and social science laboratory experiments, provides a practical expression of the academic objectives of the course.

"Understanding Society" is not only a foundation for further work in the social sciences, but should also appeal strongly to those who wish to pursue other academic disciplines. For, as Barbara Wootton has remarked, it may fall to the social sciences to bridge the chasm between the scientific and literary worlds, which is today so widely acknowledged as a threat to the integrity of contemporary culture. While our subject matter links us to the humanities our methods approximate ever more closely to those of the natural sciences."

(Guide for Applicants for Undergraduate Courses, 1974)

The mathematicians had in some ways the most difficult task of all, and it was not surprising that their course provided the highest failure-rate and the highest distinction-rate.

Their task, as they well put it, was to explain not only what mathematics does but also what mathematicians do. They need a picturesque illustration: if we consider individual topics of mathematics as islands, the basic concepts of mathematics are the ocean bed from which all the islands arise. In fact the course provides a mathematical introduction to the fundamentals of mathematics, unlike the operational approach which many of us experienced.

Apart from the basic structure of mathematics, two topics are of particular importance in the Mathematics courses—mathematical analysis and computing. Both are treated in context, not in isolation, and this makes possible work in the construction of mathematical models of situations arising in other fields and in problem-solving. This in turn links mathematics with familiar situations and displays something of the practical applications and importance. Both are covered in the course.

The course team, like some of the topics covered, "Among the universal underlying concepts (the beam bed), we include operations, equivalence relations, binary operations, morphisms, and elementary considerations of algebraic structure, such as groups, rings, fields, vector spaces, Boolean algebra. Some of the topics (the islands) which will be covered are: the theory of sets, logic, inequalities, matrices, vectors and con-

entiation, integration, differential equations, and one unit on the concepts of topology—but they insist that these are not to be treated as isolated topics, but are parts of an integral whole.

This integrated approach is the great innovation: it has been awaited for 70 years, and technical colleges and others, have been looking to the OU for a lead.

It was originally thought that technology would be subsumed under Mathematics. This slightly bizarre assumption was challenged by Lord Mountbatten when he formally opened the Walton Hall site. It had in fact become increasingly clear that we ought to have a Faculty of Technology whatever the problems of teaching technology at a distance.

The technologists were thus later in the arena than the other faculties, and their foundation course came a year later. They resented the suggestion that technology is a branch of mathematics: "Technology is not just applied mathematics or a collection of inherited skills, though they all play a part. It is creative and imaginative. It has a methodology all its own and it is to do with people."

They called their foundation course "The Man-Made World" and it is perhaps the most original of all the foundation courses. Certainly it does not look like any other basic course in technology. I have even encountered it is concerned with human problems; it is designed to be taken by those who, without professional knowledge of technology, are concerned about the impact of technology on society. I read some of the units in early drafts—it says something about the nature of the course that they were sent to the Dean of Arts for comment, and that he could understand them and was greatly fascinated by their treatment, say, of athletics or transport problems.

Once again the course-team succeeded in conveying vividly what they were trying to do: The course emphasizes three important aspects of technology.

First, technologists need to use, understand and perhaps augment the findings of research and development over a wide range of topics: physics and chemistry at one extreme, through engineering science and a study of the senses and perceptual mechanism in man, to some study of society, its cultural needs and economic and political problems at the other extreme.

Second, in order to think and design creatively, a technologist should be able to break his problem down into realistic simplifications—having first taken pains to be sure that he knows the full implications of his task. This process is called modelling. Everyone faced with a problem uses models or analogies, sometimes mathematical ones, to help find solutions. But the practical aim of the technologist put constraints upon how he constructs and uses his models. Modelling can mean thinking of one's problem in a new way (the flow of traffic as if it were a fluid flow) or it can mean analysing one's problem into a range of interacting smaller problems, each of which is better understood than the original one.

The third aspect emphasized in the course is that of general strategies an engineer can adopt to implement his design. The principles of feedback and control, of optimization, of linear programming and of simulation are studied; as are the techniques of systems design, quality control, instrumentation, data acquisition and computation. Wherever possible the computer terminals of the Open University's student computer service are used to illustrate these methods.

(Guide for Applicants for Undergraduate Courses, 1974.)

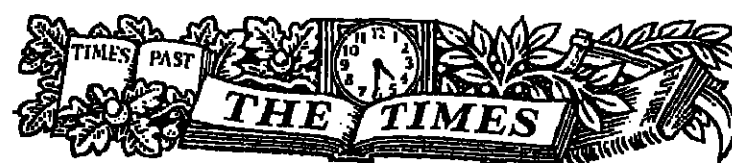
In general, the faculty is concerned to foster, through its courses, the development of the student's attitudes, and approaches to problems in the "man-made" world, to provide students with the opportunity of acquiring a qualification in some subject areas to general honours degree standard. They prefer "extrinsic" to "intrinsic" courses: that is to say that they like to look outward to real-world problems rather than inward to the logic of an abstract discipline; they value the case-study approach. There is a sense in which their approach is directed to responsible citizenship; they are less concerned with the solution of problems than with helping people to make informed choices in a technological age about the world they want.

The faculty is divided into subject areas. Here too the pattern diverges from the traditional academic engineering disciplines and concentrates instead on energy, materials and communication: the actual academic divisions are design, electronic design and communication; engineering mechanics; materials science; and systems.

For the first time, the Open University has a Faculty of Technology. The faculty is divided into subject areas. Here too the pattern diverges from the traditional academic engineering disciplines and concentrates instead on energy, materials and communication: the actual academic divisions are design, electronic design and communication; engineering mechanics; materials science; and systems.

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## How to make the best of Scotland's devolution

The conference organized last week by the *Times Educational Supplement* on Scotland's devolution in education was timely since the subject has for too long been the preserve of the constitutional lawyers and the emotional nationalists. Lord Croomer-Hunt was right, too, to emphasize that few of the administrative problems in the transfer of power from Westminster are easily soluble. It will have to set his face against any rush to legislation because his party fears the strength in Scotland of the nationalists.

The conference heard an interesting statement from the Rev Dr John MacIntyre, professor of divinity at Edinburgh University who announced his conversion to the cause of placing the Scottish universities within the ambit of a Scottish government. But if Professor MacIntyre has reached Damascus, his colleagues in the Scottish Association of University Teachers, and all the Scottish principal and vice-chancellors are still on the road and still several paces behind the government.

Professor MacIntyre's argument was that since the United Kingdom University Grants Committee no longer serves as a buffer between the Scottish universities and their claim within a Scottish-run system of education. Their finances could hardly be worse since the UGC had ceased long term planning and become a mere agency of the Department of Education and Science, he claimed. In fact the UGC system has worked, and worked well for Scotland, as all the Scottish principals have testified. But Professor MacIntyre's argument is really about something else: is devolution to be conservative in the sense of protecting existing institutions like the universities or is it to be an occasion of change and innovation?

On this score the proposal for a separate University Grants Committee in Scotland is a red herring. First, it rests on an illusion that a buffer will be more successful than a buffer against the DES. Second, it contains the implication that the United Kingdom UGC somehow has not served Scottish interests well and for that there is no evidence at all. If a Scottish UGC were simply to administer the grant from the Edinburgh government, that would simply be a costly proliferation of administration. And if the argument is that a Scottish UGC would be better able to earmark funds for Scottish purposes, the point of having a buffer is lost.

Last week's conference was important in that for the first time the detailed implications of devolution for education began to be spelt out. Lord Croomer-Hunt's position on devolution in general is clear but abstract: it will increase the amount and capacity of government; more representatives will be closer to hand and so more people will participate in government. What no one has said is that it will lead to an improvement of the education services provided by government, to better teaching in different courses and to more being spent on students in one part of the country than in another.

Whether or not the political justification for devolving power from the centre is accepted, it is worth looking at whether individual institutions—colleges and universities—will be improved and whether the services they provide will change. For devolution in Scotland seems to present an opportunity for the first time for all institutional change in higher education, for experiment and innovation. It should not be experimental for its own sake but for the sake

of an integrated system of education, equipped to face the challenges of economic revival both in Scotland and Britain at large and accountable to a new level of government. One of the main bases for devolution ought then to be the creation of a better system of administration in higher education. Various proposals have been made. The students and some individuals have argued for a higher education commission with responsibility for the universities, Central Institutions, colleges of education. Such a suggestion is in line with the general tendency of government policy in reducing overlapping courses and costs and marrying the educational services provided by institutions with different resources.

Such a commission could be the best kind of body to face the detailed scrutiny of costs and returns which the Scottish assembly is likely to start. It was gratifying at the conference to see how few Scottish educationists have been seduced by the vision of instant oil wealth, and the vision of everlasting consumption dangled by the Scottish National Party.

However this proposal is marred by its absence of concern for the role of the local authorities. This, barely months after the establishment of strong regional authorities in Scotland, has been one of the most striking gaps in the devolution debate. What kind of educational responsibilities would the regions have; how far would a higher education commission simply duplicate their work?

It is worth glancing at what kind of relationships exist between the Scottish Education Department and the local authorities because the Scottish assembly will not rebuild the system of administration from scratch and will have to rely on the traditions of the least accountable of government departments. In fact, relationships are good although that does not exclude the need for better coordination of courses between the further education colleges in, say, Strathclyde and Lothian and the Central Institutions run from the SED.

A higher education commission would initially have to be virtually a pocket department of the SED and it is this the universities might have some cause to fear. What the university principals are required to have, if at the end of the day Scottish education is run in toto from Edinburgh by civil servants, is faith in the enlightenment of their fellow countrymen and trust that civil servants have enough belief in the traditional forms of university education for them not to be submersed entirely in a higher education melange of institutions.

The emancipation of the Scottish universities from the tutelage of a Scottish assembly, as the principals wish, cannot be justified if Scottish government is to be innovative in anything but the crudest tartan sense of colouring parts of Scotland with tartan. If independent government is to mean anything, it must mean the charge of institutions, the Scottish universities have quickly to take due of Professor MacIntyre's suggestions to heart and plan a role for themselves within the new regime rather than waiting for it to be imposed. Without an imaginative look at the future and over their shoulders at the other Scottish higher education institutions and their futures, the Scottish principals are likely to find themselves an advisory committee to the Scottish Education Department, though probably more the less effective for all that.

to mean left-handed. In other words the hand that did the damage was the left.

I imagine Dr Frank Parkin would like to be relieved of his additional duties as the "chained middle" and Professor Michael Oake would like to be relieved of his middle "chained" duties. No doubt such a phrase is suggested but in fact, I write "chained" as a simile at the end of the line.

Yours faithfully,  
BURNICE MARTIN  
Department of Sociology

## LETTERS TO THE EDITOR

### The AUT and the future

from Mr James Sang

Sir—There is no doubt that the arbitration tribunal award to university teachers is a defeat for the Association of University Teachers, and a victory, if only partial, for the Department of Education and Science. It is a bitter blow to the status of British universities, especially when we measure our situation against that of comparable institutions in the EEC.

The AUT executive has not served us well, particularly during the past eighteen months, and it must carry that responsibility. However, we must also recognize that no general is better than his army, and we have now seen that university teachers are a ragged rubble when it comes to fighting for their own university interests. In that respect we have got what we deserved, and must accept our share of responsibility for the outcome.

Two issues now arise: should the AUT continue as it is, and should it persist in operating the present wage negotiation system? I have heard three proposals concerning the first question: (1) we should move into the more militant Association of Scientific Technical and

### Part-time degrees

from Mr C. W. Healey

Sir—It was encouraging to read Frances Gibb's report of Professor W. E. Styler's views and headed "Reluctant universities block part-timers" (*THES*, May 30). It is certainly about time that universities began to look outward at the vast mass of people outside their hallowed doors who remain untouched by advanced educational opportunity.

The majority of university entrants remain extremely privileged and fortunate people who are enabled to study full-time only because working class people dutifully pay their taxes and indirectly provide grants. As a former adult student I can appreciate the need of many people who, never having had the chance to enter university, would love to attend a course of planned instruction leading to a degree. Their handicaps are many and as yet unappreciated within the ivory tower world of full-time university education.

For those with families to support, embarking on a full-time course of education would mean a loss of earning power from which, in these austere days, they might never recover. But if they were allowed the opportunity to study for a degree, in the subject of their choice, on a part-time basis, this difficulty would be removed.

There is certainly no reason why universities in Britain could not adopt the credit system applied in America and Canada, nor why they should continue to restrict their courses to full-time instruction. It is a sad commentary on the lack of a genuine democratic educational system in this country when an Open

University has to be set up to help people.

The very word "university" implies openness and yet to 80 per cent of the population these centres of learning are as difficult to enter as the Kremlin. They are hedged round with anachronistic restrictions and regulations designed almost exclusively for the sixth form leaver of grammar and public schools.

Idea of learning as a life-long activity seems not to have been considered except at post graduate level. Why is it that only a few universities in Britain run part-time degree courses and these only in fields, such as education, with a marked vocational bias? Even London University has made little progress in modernizing its English degree courses for external students who, should they wish to work for BA, have the daunting task of coping with Anglo-Saxon and Middle English before they can begin to study in their own vernacular.

Would it not be a thoughtful act for some enterprising English lecturer to begin a course of Modern English Studies especially designed for external students, rather like the kind of GCE advanced level courses designed by the Associated Examining Board for mature students in past years?

University departments could become real centres of learning and value with an influx of mature students studying part-time whose general eagerness to learn for themselves, to be critically aware and to be a stimulating force for change and value in education would prove of lasting and beneficial value both to universities and to the country.

Yours faithfully,  
C. W. HEALEY  
Nesbitt Street,  
Dundee.

Managerial Staffs (which is not, since only a minority would be prepared to do so); (2) we should form a combined union of teachers in higher education by amalgamating with the Association of Teachers in Technical Institutions (or its successor), but this seems to ignore, among other things, the basic fact that we have different employers, and (3) we should recognize that we are direct government employees, and become a branch of the appropriate civil service union.

I favour the last option, which has been successful in Holland, I believe, mainly because it recognizes reality, and would bring us back to the group with which we have been striving to compare ourselves. Whatever the AUT membership may conclude about these options, it seems quite obvious that we need a wage negotiation machinery, clear of the Vice-Chancellors and Principals' Committee. No union can fight with one hand tied behind its back.

I hope the membership will discuss these matters vigorously, otherwise we will do as badly in the difficult autumn negotiations as we have done now.

Yours sincerely,  
JAMES SANG,  
Surrenden Crescent,  
Brighton,  
Sussex.

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Yours faithfully,  
ROGER BURLEY,  
Department of Chemical and Process Engineering,  
Heriot-Watt University.

from Mr L. A. Gilbert  
Sir—Renford Brough's early and competent argument (*THES*, June 13) against the need of university teachers for training in the skills of teaching would have been more convincing if he had made any reference, however slight, to the student's point of view.

His attitude to the needs of the learner is well exemplified by his dismissal of the Open University's television programmes on "philosophy as unnecessary and inappropriate."

Is the evaluation of the quality of a student's learning to have access to the real thing (Cambridge) or perhaps he could humbly put himself in the place of a student who has not even had the opportunity to enrol at Smokestack but who is valiantly struggling to cope with the help of the Open University?

A television lecture is a double-edged sword. It can be a good deal better than direct contact with a fine mind, but it can be a good deal better than nothing at all.

May one suggest that Mr Brough's comment was unnecessary and inappropriate—even, perhaps, thoughtless.

Yours faithfully,  
L. A. GILBERT.

### Research finance

from Dr Roger Burley

Sir—Professor Aleksander has rightly pointed out (*THES*, June 13) the severely detrimental effects on university research of the cuts in universities per se, but also for the country as a whole. Research may be despised by your self-confessed academically redundant correspondent from Cardiff, however there are many departments who have produced, and will continue to produce, ideas and developments of direct and immediate relevance to this country's needs.

Specific to part of this university's commitment for instance, in offshore oil and related industries require: (1) production of qualified personnel; (2) an adequate fund of knowledge and expertise; (3) a research activity geared to the needs of these industries.

In order to accumulate (2) and carry out (3) a supply of research students will be required, while under present circumstances are not forthcoming. With salaries of the order of the sixth point of the present lecturer scale being offered by industry, this is hardly surprising and furthermore similar offers of attractive salaries will no doubt attract to members of the teaching staff, who will then turn the personal required in (1)—now graduate students.

Certainly, assuming the position of a research student with industrial experience and research qualifications will be interesting.

Research students will be found from the oil producing countries to fill the present gaps in our research effort as they alone have enough funds for their sojourn in this country.

One hopes that before the battle men move in and start winning their own or the government's shears, they look at the particular university rather than university in general. No doubt, judging by some of your correspondence last week, little copying would not be done, but to indiscriminately fund for research activities across the board would directly conflict with the expressed policies of our Government departments, and lead to a point where, as Professor Aleksander rightly states, universities will become teaching factories and completely unviable as such.

Universities should challenge the faceless policy makers (who no doubt at one stage in their career found that things improved by degrees) to justify any reduction of research levels, redirection may be required but a blind speed at every one will have lasting and damaging effects to this country for years to come.

Yours faithfully,  
ROGER BURLEY,  
Department of Chemical and Process Engineering,  
Heriot-Watt University.

### Teacher training

from Mr L. A. Gilbert

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Women of the Forest  
by Yolanda and Robert Murphy  
Columbia University Press, £4.75  
ISBN 0 231 03682 5

When the great jungle-enshrouded river was first discovered, the explorers encountered savage matrilineal tribes. Mistaking their system of descent for the matrilineal, the explorers thought they had discovered true Amazon women, and named the river accordingly. Throughout subsequent history, however, these fierce tribes were either exterminated or driven far up the tributaries, where some of their customs have survived, and have broken down and almost all have changed in some way. One of the tribes, the Mundurucu of the Tapajos tributary, appear to have a patrilineal system, though in mythic times the women were said to rule. Now they number only 1,250 while some neighbouring tribes are even smaller. The life of the "Amazon" women of the Mundurucu is the subject of this study.

The first of many ironies uncovered by the analysis is that the women of this forest people, on whom all depend so vitally, who provide stability, who rule the home and agriculture, who in spite of patriarchy are very much the focus of their extended families, are under subjection in the cultural life of the Mundurucu. I have long been impatient to hear the real facts about the women of those warlike, ritualized myth-spinning peoples. Here at last they emerge from the shadows and we learn a great deal about their predicament.

*Women of the Forest* begins with a vivid description of a day in the life of one woman, Borai, through whom we become familiar with this exotic culture. On a breezy hillside in the savannah, in one of the poorest women's houses (as important as the famous "men's house" of this region) Borai wakes in her hammock with her baby; we follow the women down to the wooded stream and to the manioc fields within the forest, and we experience the strong, easy comradeship of the big group of women as they work in cooperation to process the spongy masses of wet manioc. I have never read a chapter in anthropology so evocative of the life of women.

In the chapters that follow the Murphys reveal the complexities of the women's status. The patrilineal system, taboos women from participating in any ritual, from feeling myth from entering the men's house or from any sight of the sacred *kariká* trumpets enshrined there. The principal ritual of the Mundurucu is performed when new trumpets are installed or brought to a new village. Then the women are supposed to hide and weep because

they have "lost the sources of power."

The sexual aggressiveness of the men necessitates constant chaperonage, in fact the women never lift their eyes to a man in a custom possibly related to that of the neighbouring Suya where only witches use their eyes boldly. Any woman who dares to go alone or tempt the men is immediately punished with gang rape. Things are so bad that the women simply hope to be left alone, even by their husbands. Naturally one wants to know more about the draconian patrilineal system which must be responsible for this. But as the Murphys unfold the strange story we realize that the patrilineal system governs only such harmless matters as membership of a moiety, the moiety system ensures exogamous or cross-cousin marriage and the choice of a name for a child. These do not seem very severe impositions. It cannot be patriarchy that dictates who should enter the men's house, for all the men of the village sleep there irrespective of lineage.

What is more curious is the strong tendency towards matrilocality in the women's houses. Not only this but shallow matrilineages appear there. These can be traced from the small carefully described genealogies (diagrams are unfortunately not included). Matrilineages actually number patrilineages in these groups. It seems the patrilineal is not really the right term for this system.

The subjection of women thus appears to be purely a matter of ideology and of the generalized unity of the group of men. It is not concerned in any way with the ownership of land or houses. Even chiefs, which is indeed in the hands of the men, confers very little power, an agreement among the total men's group being essential for every group activity. All in all it is surprising to see how unstructured and even unsexed the women even in their actual lives. Yet the power is there; and this situation is a common feature of many other human societies.

So how do the women actually fare? It is interesting that the principal lament of the women, as the famous "men's house" of this region) Borai wakes in her hammock with her baby; we follow the women down to the wooded stream and to the manioc fields within the forest, and we experience the strong, easy comradeship of the big group of women as they work in cooperation to process the spongy masses of wet manioc. I have never read a chapter in anthropology so evocative of the life of women.

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## BOOKS

### Emasculated Amazon women, or men?



Making a favourite drink using manioc meal.

what materialist and psychological standpoint of the authors.

Here there seems to be a bias in the book, for symbolic material is handled with marked lack of interest. The apparent "matter-of-factness" and straightforward "ethnography" of the book is a little world leads the authors to conclude that the women do not really care a whit for the men as a group or for their ritual doings. "They knew all about it ritual paraphernalia... and they were neither mystified nor cowed. It is as if they had investigated the secret sources of the men's power—and had found absolutely nothing." Even though the men dominate in "the symbolic realm of culture by a sort of fetishism (the *kariká* trumpets)... the woman remains the custodian and perpetuator of life itself. Those who would question the worth of this trust must first ask if there is anything else in human existence that has an ultimate meaning (the last sentence in the book).

However, the same characteristic among the nearby Bororo tribe did not disconcert Levi-Strauss. He, too, noted the nonchalant with regard to the supernatural, yet concluded that "few peoples are as deeply religious as the Bororo, few have so elaborate a system of metaphysics."

But their spiritual beliefs and their habits of every day are so intimately mingled that they do not have any sensation of passing from one to the other. Yet the layout of the village does not only allow full and delicate play to the institutional system; it summarizes

and provides a basis for the relationship between Man and the Universe, between Society and the Supernatural, and between the living and the dead" (*Tristes Tropiques*, New York, 194).

There seems to be a major discrepancy here. It is as though the present authors had made a judgment on behalf of the Mundurucu women and condemned the ritual system because of its exclusions and gang rape. This has our sympathy. Yet one has the sneaking feeling, from hints in this book and others, that there were ritualized acts in the old days that women did perform with gusto—possibly one of their number offered herself for a night in the men's house, for the very gang rape so dreaded by the women nowadays (mission influence here?). The women's laughter and tolerance, with a certain charm, able lasciviousness comes through in the minor passages. Surely an anthropologist could make a sympathetic study of the remaining rituals of the women of Amazonia before it is too late.

The men's ritual life is briefly described. The myths and sacred objects are analysed to reveal how they express and provide an escape from deep Oedipal guilts and disruptions. Thus the young boy is destined for a life of danger in the hunting grounds of the forest, far from his mother, security and home. His shock of loss is worse than the girl's. Fear of the unknown is endemic. A stranger wife would be included in the category of the "unknown", and the desire to return to the womb must be strong.

Edith Turner

### There is no time such as the present

Hutterite Society  
by John A. Hostetler  
The Johns Hopkins University Press £7.70  
ISBN 0 8018 1584 3

The first quality that strikes one about John Hostetler's book is how sensuously pleasing an object it is to handle. Its pliancy, binding and heavy cream paper complement the beautiful photographs of contemporary Hutterite life which intersperse the text. The book as a physical object has the same quality and style as the furniture and clothing of the Shakers in the recent exhibition at the Victoria and Albert Museum. The theology of both Hutterites and Shakers involves a deep mistrust of aesthetic pleasure, for its own sake and in particular of any embellishment beyond the requirements of functional necessity. Yet clean lines and perfect workmanship have an unmistakable beauty of their own. So just as puritanism accumulates wealth while mis-trusting affluence, Hutterite puritanism produces the

conditions of successful commune life: an unyielding, unending and near total process of socialization into the norms of the group and the minimization of privacy and of a sense of individual selfhood. If socialization is total and homogeneous then decisions can safely be left to democratic process. But there is a price. Intensity and imagination are not admired; rather a quiet willingness coupled with hard work is considered desirable. This is because Hutterites see illegitimate life as the only protection from agnostic individualism and sinful selfwill. Lapses are punished but guilt is not internalized; the punishment merely reinforces the fallibility of the individual and the superior value of the group.

The Hutterites have lost much of the attraction of their European past and are now exclusively agricultural. They are successful farmers who welcome modern technology, though they employ it in their work rather than for their own comfort—their hog barns have recently heated floors, the human dwellings, for example.

They have evolved a conscious and highly successful strategy of communal survival which largely solves the problem endemic in their

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They have evolved a conscious and highly successful strategy of communal survival which largely solves the problem endemic in their

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## BOOKS

## The physicist who came in from the cold

Joseph Fourier: The Man and the Physicist  
by John Herivel  
Oxford University Press: Clarendon Press, £9.75  
ISBN 0 19 53149 1

Jean Baptiste Joseph Fourier (1768-1830), well-known for his *Theorie Analytique de la Chaleur* (1789-1801), well-known for his name, led an unusual life. He played a leading part in the French Revolution, was imprisoned twice and, unlike for example Lavoisier, escaped with his life. He was an important member of Napoleon's Egyptian campaign and was permanent secretary of the Institute of Cairo (1798), Bonaparte being

vice-president and Gaspard Monge president. He became a member of the French Academy in 1816 and a fellow of the Royal Society in 1822. He was an admirer of Lagrange and had cooler dealings with Laplace and Poisson who were critical of his work. In 1815 during Napoleon's hundred days he "left Grenoble on the night of 7 March. By the twelfth he was in Lyons. When he left Grenoble he was still Prefect of Isère under the King. When he reached Lyons he had become Prefect of the Rhône under Bonaparte."

A remarkable metamorphosis which, together with other episodes and reflections on the contemporary scene, makes part one of this book absorbing reading.

The second part contains an

analysis of Fourier as a physicist. Although we can look back on more than a hundred years of study of Fourier as a mathematician, the emphasis on Fourier as a theoretical physicist is new, and complementary to his earlier work. The author modestly disclaims any intention to produce a definitive work on Fourier, which he feels will perhaps be written "by one of Fourier's own compatriots". It is clear, however, that this is a remarkably thorough study whose part one and appendices will be of importance not only to historians of science, but also to historians of the French Revolution. Part two will have a more limited appeal. The historians of science who follow the byways, errors and corrections of a theory, in this case the conduction of heat in solids, will find it essential reading. Others will examine this part more superficially.

The author suggests that the motivation for Fourier's study of heat flow may have originated with the sudden change in climate Fourier experienced in 1801 when he moved from Egypt to Grenoble, a change which appears to have given him severe rheumatic pains. He apparently always wore an overcoat and was "often accompanied by a servant with another coat in reserve". Anyway, leaving this speculation on one side, it is certain that by 1807 he had written his memoir on the propagation of heat and the book traces its progress to become a prize essay in mathematics for the year 1811, with its first printing which was begun, but not completed, in 1816.

The author does not pursue the direct and indirect consequences of

Fourier's work in as much detail as one might have liked. Perhaps one of the most striking ones is that William Thomson (Lord Kelvin) borrowed Fourier's book in 1840 from the Glasgow University library, read it in a fortnight and applied the theory to the cooling of the earth, thus convincing himself, and many others, that cooling was taking place at such a rate that the age of the earth could not exceed one hundred million years in stark contrast to what had been claimed by Darwin and the geologists. This great geological controversy was resolved only when it was realized that the heating of the earth by radioactivity had to be included in Lord Kelvin's calculations, and peace descended again on the warring academics.

Peter Landsberg

## Catastrophe in space-time

The Large Scale Structure of Space-Time  
by S. W. Hawking and G. E. R. Ellis  
Cambridge University Press, £10.00 and £3.95  
ISBN 0 521 20016 4 and 09906 4

Although the title contains the word "catastrophe", this is not primarily a book about cosmology, but rather a collection of modern developments on topological and global aspects of space-time physics. In the last decade, our understanding of the properties of space-time has increased enormously by analyses which have concentrated on certain general structures of space-time, such as the causal structure. One of the more spectacular results of this work has been the proofs of the so-called singularity theorems. These theorems, primarily due to the brilliant work of Penrose, Hawking and Geroch, show that under a very wide range of reasonable physical situations, space-time will develop a catastrophic feature known as a singularity, which is referred to by the authors of this book as a kind of "edge" to space-time. Such a singularity is expected to occur as the end-point of the evolution of a massive star, which may undergo violent gravitational collapse to form a black hole. The black hole itself is a region surrounding a singularity. Recently, much excitement has been generated by the

possibility that a black hole has been detected in the constellation of Cygnus. The other context in which singularities are discussed is the beginning of the so-called big bang which is frequently held to represent the creation of this universe. Although only the final chapters of this book are devoted to a description of these events, in a sense they are the main purpose and chief conclusions of the book.

The development of the subject matter is straightforward and well presented. The authors set up the mathematical formalism for their subsequent discussion in chapter two of differential geometry in a modern coordinate-free notation. Although the essentials of the mathematics are given, the reader really requires an acquaintance with point set topology and modern calculus. The discussion of the subsequent chapters is in the framework of the general theory of relativity, which is briefly reviewed in chapter three.

There follows a discussion of the first of two main "areas of study"—the theory of the behaviour of families of timelike and null curves in space-time.

A chapter is devoted to exact solutions of Einstein's field equations of general relativity. This chapter alone might well have formed the subject matter for an entire book, treating as it does all the important well-known spaces—Schwarzschild,

Kerr and Reissner-Nordström "black hole" solutions, as well as the better known cosmological models—Robertson-Walker, de Sitter, Bianchi I and Gödel, and also Taub-NUT space. Three chapters could well have been devoted to this material; the rather cursory treatment limits its use somewhat as a teaching text.

The second main area of study centres upon the causal structure of space-time. This chapter, like the one dealing with timelike and null curves, is presented in formal and precise style, stating and then proving the various lemmas and theorems necessary for the discussion of singularities which follows. The singularity theorems are stated and proved in chapter eight, and lead naturally to the description of cosmology and black holes at the end of the book. A chapter is also given over to the Cauchy problem in general relativity, and an interesting appendix reprints Pierre Laplace's classic prediction of black holes in 1798.

This book is undoubtedly a work of major significance. By collecting together a large number of complete and in some cases incomplete pieces of work in a well organized and carefully presented text, the first-time access to most of the important modern mathematical developments of general relativity in one volume.

Paul Davies

## Breadth of mathematical knowledge

Stanislaw Ulam's Sets, Numbers and Universes  
selected papers edited by W. A. Rorer, J. Mycielski and G. C. Rota  
Massachusetts Institute of Technology Press, £7.50  
ISBN 0 262 02108 0

Selected works of Stanislaw Ulam, including papers published between 1929-1971, and concentrating on Ulam's early work and a fairly narrow range of his later studies, are reprinted here. A second volume is intended to cover the other areas. The major difficulty in selecting the work of Ulam is its tremendous diversity. There can be few mathematicians who can compete with him for breadth of knowledge: he took 15 high-level mathematics to write the compendium.

The first 25 of Ulam's papers are reprinted in full and cover significant work in set and measure theory with contributions to group theory and probability. By the end of this period (1935) Ulam had moved from Poland to the United States at the invitation of von Neumann, the influence of von Neumann, the nuclear programme, the development of computers and eventually the space programme show very clearly in the subsequent papers. Out of about 75 written in this period, 25 are

concern the construction of his work in pure mathematics, developments in ergodic theory and the use of computers in number theory, non-linear transformations, Monte Carlo methods and other statistical and simulation techniques.

My own interest in Ulam's work stems from the middle period, and an important paper on ergodic theory. In statistical mechanics the method of working is to assume the validity of the ergodic hypothesis that the "time average" of a property (which is measured) is equal to the "space average" (which is calculated). The mathematical conditions for this to hold were known but it was left to Ulam and Ostro to show that such conditions hold for "most" transformations. What was not proved and has still not been decided is whether or not physical systems belong to this majority of transformations. The paper does, however, give convincing support to the physicist that his standard practice is correct.

Following this line of thinking Ulam moved on to a series of papers on a similar but more practical theme. He produced a paper in 1949 on Monte Carlo methods indicating a thorough appreciation of the potentialities of computers at a very early stage in their development. The main idea was to use a computer on a small number of particles with all the microscopical data included, to simulate a macroscopic system and to give estimates of macroscopic data such as tempera-

ture. The method has become absolutely standard and now provides basic data on useful physical systems, and a very good testing ground for approximate methods.

Central to many of these developments is the notion of a transformation of a region of space into itself and of repeated application of the transformation. This idea was well stated in Ulam's work in probability theory. In most practical problems these transformations are non-linear and hence extremely difficult to study. Working on the principle that "unless you know what one is looking for it is difficult to progress" Ulam performed a great many numerical experiments on a class of non-linear transformations. These have stimulated some particularly useful work and emphasize the delicate nature of non-linearities.

The final part is a reprint of *A Collection of Mathematical Problems*. It has been a standard source of mathematical problems for many years and the collection of serious and difficult problems has aroused much interest and stimulated much work.

There are commentaries on most of the reprinted papers and these are useful in pointing the directions in which work has moved since the original. I can recommend this original to any reader who wishes to see breadth of knowledge in action. It should be a standard in all serious mathematical libraries and in the personal libraries of people who have used Ulam's work.

D. M. Burling

## Rivalries

Originality and Competition in Science: A Study of the British High Energy Physics Community  
by Jerry Gaston  
University of Chicago Press, £5.50  
ISBN 0 226 28429 8

Despite the rivalry and competition between the *heps* and *hels*, both camps have dedicated their lives to the cultivation of the elap fruit. "The sole aim of the *heps* is to breed a significantly new variety of elap, as measured by the beauty of its flower and . . . the fragrance of its fruit . . . The *hels* on the other hand . . . work together as a gang under the direction of an experienced headman. The harvesting of a satisfactory crop of elap is extremely expensive and laborious, calling for great communal resources. Rivalry . . . within a gang is firmly suppressed . . . The competitive incidents reported by anthropologists have almost always involved *heps* gangs from different tribes—*uk-heps* in competition with *us-heps*, for example."

It is in such phrases that John Ziman's charming and perceptive "anthropological" preface contrasts the theorists and the experimentalists in this study of communication and competition within the high energy physics (HEP) community in its search for elementary particles. There is nothing new about studies of the reward systems in science. We know that there is competition and rivalry, secrecy, priority disputes and occasional feuding. Originality is the goal, and the prize goes to he who first stakes his claim. However much science may be described as a body of verified public knowledge, the processes by which the fruits of knowledge are cultivated are an essentially human affair involving passions, rivalries, fears and hopes. The anthropological perspective is, in this sense, singularly appropriate. And while it may be fashionable to challenge the simplistic claims of some scientists to an objectivity and detachment which bears little resemblance to the reality of the process of creative discovery, this study of competition and the struggle for recognition exemplifies the vigorous competition within the social system of science which, though imperfect, ensures the high quality of scientific knowledge.

If this were all, this book would add little to our basic understanding of the social organization of science. (The study was first published in the United States in 1971.) But its value lies partly in its comparative approach, and partly in challenging the current neglect of the institutional context of science. (Merton is no longer fashionable.) For what is clear from this study is that it is the organization of science which affects the behaviour of scientists in their cultivation of knowledge. It is because the system of funding in the United Kingdom and the United States differ—because British universities are less hierarchical—that there is less personal competition, and more freedom to concentrate on doing science than on career mobility. Generalizations from American studies to British science, or from one special subject to science in general are thus strongly challenged. What this book does not do is to attempt to resolve the paradox of the ideal of disinterestedness with the reality of the pursuit of personal glory. Indeed, the study is in many ways too close to the Mertonian model of science, especially since Merton's work on the Apollo "moon" scientists.

This is not a book for the general reader, nor for introductory courses. It bears all the marks of its origin as a PhD thesis. But for the serious student of the sociology of science, it is more than a useful case study and replication of earlier American work. Patterns of communication and of competition and rivalry are both shown to be complex.

The authors provide a well-written, if somewhat detailed, review of the history of high energy physics. While unsuitable as a textbook for undergraduates because of its complexity and price, it would be useful for postgraduates and research workers with a knowledge of biophysics.

D. M. Burling

## Imperfect crystals

The Solid State  
by H. M. Rosenberg  
Oxford University Press: Clarendon Press, £6.50 and £2.25  
ISBN 0 19 531833 1 and 851832 3

Dr Rosenberg's book is part of the Oxford Physics Series which aims to give a closely integrated coverage of the material needed for degree courses in physics, or physics in combination with other subjects. This volume is suitable for second-year undergraduates in physics, in materials science and engineering. As the author emphasizes, one of his aims was to write a slim volume and though he has succeeded in keeping it at around two hundred pages, it is still twice the length of a typical book in the series.

A feature of the book is the emphasis it puts on the fact that real crystals are imperfect. On the first page we are told that many solids (e.g. glasses) are not crystalline at all, but it is not possible to cover this latter area in a book at this level. Nevertheless, after a chapter on crystal structure and a second on waves travelling in a perfect lattice, the third chapter is devoted to defects and disorder: a proper recognition of the importance of imperfections in the modern description of solids. Vacancies, dislocations, interstitials and other defect centres are briefly treated, but the idea being introduced that there is an equilibrium concentration of vacancies present in any crystal at an elevated temperature, the number being determined by the energy required to form a vacancy, relative to the thermal energy.

The next chapter is then devoted to dislocations. The concept of such line imperfections, going back to Taylor, Orowan and Polanyi, is of considerable importance in the study of solids. Mechanical properties have been given much less attention by physicists than many other properties of solids. It is therefore a useful feature of this book that the student can acquire enough background to enable him to tackle specialist books on the relevance of dislocations to crack propagation and their generalizations—a subject that he has made peculiarly his own over the last fifty years.

He tells us in the preface that the relationship of this new work to his earlier *Regular Polytopes* is much like that of *Through the Looking-Glass to Alice's Adventures in Wonderland*. "The sequel is more profound; it is essentially self-contained, but some of the same characters reappear with recognizable but slightly changed names, and there are many new characters of the same sort, but even more fantastic."

It is a pity that the author, who has already written a volume on low temperature physics, fails to necessary to omit superconductivity completely, as this is important not only for the profound ideas (e.g. Cooper pairs of electrons with opposite spins moving together over large distances without scattering), but also has great technological interest.

There are problems at the end of each chapter, obviously valuable in allowing the reader to assess his grasp of the material before proceeding further. Useful advice for further reading is included as well as a short table of physical constants and conversion factors. The paperback version is good value for money and well within the range of the student's pocket.

N. H. March

## Plant cells

The Physiology of Giant Algal Cells  
by A. B. Hope and W. C. Walker  
Cambridge University Press, £8.50  
ISBN 0 521 20513 1

The movement of molecules into and from living cells and the relationship between structure and function in cellular activities have long provided an arena for active biological research. Plant cells are perhaps even more difficult to study than animal cells in this respect, because of the cell wall, which acts as a weak ion-exchange resin and easily occludes nutrients, and the very thin layer of cytoplasm as compared with the large central vacuole. Giant algal cells, whether or not eucaryotic, tend to present fewer difficulties and have thus been the favourite organisms for the study of plant cell transport. This book is a concise and up-to-date account of the work on these algae.

Unfortunately, the title is misleading, since the authors do not treat all aspects of physiology in these cells but direct their attention to the difficult subject of membrane transport. There are two chapters of an introductory nature, dealing with the taxonomy of the algae, culture methods and experimental techniques, and the history of research on cell permeability. These are informative and interesting and present perhaps the best treatment of these subjects possible in so little space.

The major portion of the book is concerned with the movement of water, non-electrolytes and ions through the giant algal cells and the correlation between transport and electrical potentials, action potentials, active accumulation, and protoplasmic streaming. These topics are treated in a fairly complex biophysical manner. There are two appendices which explain the derivations of some of the equations used and also a good reference section. However, few general review articles or texts, which might aid the less sophisticated reader, are included.

The authors provide a well-written, if somewhat detailed, review of the history of giant algal cells. While unsuitable as a textbook for undergraduates because of its complexity and price, it would be useful for postgraduates and research workers with a knowledge of biophysics.

D. M. Burling

## BOOKS

## In four dimensions

Regular Complex Polytopes  
by H. S. M. Coxeter  
Cambridge University Press, £9.80  
ISBN 0 521 20125 X

The reputation of Professor Coxeter, as a writer on geometry, is such that the appearance of any new work by him is an event of some mathematical importance. This is doubly the case when he writes about polyhedra and their generalizations—a subject that he has made peculiarly his own over the last fifty years.

He tells us in the preface that the relationship of this new work to his earlier *Regular Polytopes* is much like that of *Through the Looking-Glass to Alice's Adventures in Wonderland*. "The sequel is more profound; it is essentially self-contained, but some of the same characters reappear with recognizable but slightly changed names, and there are many new characters of the same sort, but even more fantastic."

The early chapters are introductory, being mainly concerned with geometry in two or three-dimensional space; but we soon move on to explore the more exciting space of four dimensions with the menagerie of strange geometric configurations that inhabit this space—including the 16 regular polytopes. There are also chapters on the geometry of quaternions and on the enumeration and presentations of the finite multiplicative groups of quaternions.

The later chapters are concerned with geometry in complex affine

spaces. The *n*-dimensional unitary space is introduced using vectors, Hermitian forms and inner products; the two-dimensional case is studied in great detail, and there is a complete enumeration of the finite reflection groups in the unitary plane. This leads to the climax of the book, which is an exposition of recent results on regular complex polytopes and honeycombs.

The whole is written in the style typical of Professor Coxeter—infectiously enthusiastic about developing the main themes, yet always willing to be side-tracked in order to point out some new insight or unexpected connexion. Thus there are digressions on such diverse topics as magic squares, frieze patterns, Clifford surfaces and crystallographic groups. There is also a great deal of historical background and anecdote; and those readers who enjoy the author's habit of introducing his chapters with (sometimes outrageously inapt) quotations will find plenty to amuse them.

Over and above all this, however, the most outstanding feature of this book is its diagrams. Many of these are quite breathtaking in their beauty and must rank among the finest examples of mathematical art that have ever been published. The frontispiece, from a drawing by Peter McMullen, is particularly spectacular.

The book is beautifully produced and must take its place as the finest of all Coxeter's books. It is a cheap—good things never are—but it is an investment in which all good geometrical libraries should indulge; they will be incomplete without it.

John Tyrell

William Shakespeare  
A Documentary Life

S. Schoenbaum

I recommend the book to all who are either fascinated by the life, or fascinated by the problem of why so many people are fascinated with it . . . it is lavishly and ingeniously made . . . the whole affair is rather magnificent. —Frank Kermode in the *New York Times Book Review* Illustrated £12

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Richard Cobb

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## Oxford University Press

## A History of the Oxford University Press

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Harry Carter

This volume is the first of two (or possibly three) which will trace the history of the Oxford University Press up to the present. This is the oldest press in the kingdom, and its records, to which the author was given unrestricted access, reveal a good deal of interest about the history of the book trade and of learned editing. Illustrated £15

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